

MAINVIEW® AutoOPERATOR™ Options User Guide

Version 6.2

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 - product name
 - product version (release number)
 - license number and password (trial or permanent)
- operating-system and environment information
 - machine type
 - operating system type, version, and service pack or program temporary fix (PTF)
 - system hardware configuration
 - serial numbers
 - related software (database, application, and communication) including type, version, and service pack or PTF
- sequence of events leading to the problem
- commands and options that you used
- messages received (and the time and date that you received them)
 - product error messages
 - messages from the operating system, such as `file system full`
 - messages from related software

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How To Use This Manual

This is the *MAINVIEW AutoOPERATOR Options User Guide*, which documents user information and reference information for the following options for MAINVIEW AutoOPERATOR:

- MAINVIEW AutoOPERATOR TapeSHARE
- MAINVIEW AutoOPERATOR for IMS
- MAINVIEW AutoOPERATOR for CICS
- MAINVIEW AutoOPERATOR Access NV
- MAINVIEW AutoOPERATOR for OS/390 (previously called MAINVIEW AutoOPERATOR for MVS)

Use this manual when you need information for any of these five MAINVIEW AutoOPERATOR options. The MAINVIEW AutoOPERATOR Elan Workstation and MAINVIEW AutoOPERATOR for MQSeries options are documented in separate sets of manuals (refer to “MAINVIEW AutoOPERATOR Product Library” on page xxi for more information).

This manual also makes several references to the BBI-SS PAS, which provides subsystem communication in its own MVS address space. The BBI online environment is described in the:

- *MAINVIEW Administration Guide*
- *MAINVIEW Common Customization Guide*
- *Using MAINVIEW*

This manual is for system programmers and operators.

How This Manual Is Organized

The manual contains the following parts:

- Part 1. Using MAINVIEW AutoOPERATOR TapeSHARE to Manage Tape Device Sharing

This part contains chapters that describe the MAINVIEW AutoOPERATOR TapeSHARE component, how to use the TapeSHARE Workstation panel, and how to customize MAINVIEW AutoOPERATOR TapeSHARE. The major sections of this part are:

- What is MAINVIEW AutoOPERATOR TapeSHARE and How Does It Work
- Controlling Tape Activity from a Single Point with TapeSHARE
- Customizing TapeSHARE (Optional)

- Part 2. Using the MAINVIEW AutoOPERATOR for OS/390 Option

This part contains chapters that describe the applications available with the MAINVIEW AutoOPERATOR for OS/390 option. This part also contains information for the SYSPROG services that are available with this option. The major sections of this part are:

- Introduction to MAINVIEW AutoOPERATOR for OS/390
- SYSTEM STATUS Application
- VTAM RESOURCES Application

- OPERATOR REQUESTS Application
- ENQUEUE/RESERVE Application
- ADDRESS SPACES Application
- TAPE STATUS/CONTROL Application
- DASD STATUS/CONTROL Application
- SYSPROG Definitions

- Part 3. Using the MAINVIEW AutoOPERATOR for IMS Option

This part contains chapters that describe the applications available with the MAINVIEW AutoOPERATOR for IMS option. The major sections of this part are:

- Introduction to MAINVIEW AutoOPERATOR for IMS
- NETWORK Application
- DATABASE Application
- TRANSACTION Application
- PROGRAM Application
- STATUS/EXCEPTION Application
- REGIONS Application
- Customizing panels
- Automating and simplifying IMS operations

- Part 4. Using the MAINVIEW AutoOPERATOR for CICS Option

This part contains chapters that describe the applications available with the MAINVIEW AutoOPERATOR for CICS option. The major sections of this part are:

- Introduction to MAINVIEW AutoOPERATOR for CICS
- Individual MAINVIEW AutoOPERATOR Applications

- Part 5. Using the MAINVIEW AutoOPERATOR Access NV Option

This part contains chapters that describe the applications available with the MAINVIEW AutoOPERATOR Access NV option, which allows you to communicate with the IBM product, NetView. The major sections of this part are:

- Introduction to MAINVIEW AutoOPERATOR Access NV
- The NAIEXEC NetView Command Processor
- The IMFEXEC NetView Command Processor
- The NetView Emulator

- Part 6. Appendixes

This part contains the SYSPROG User Exit appendix, the BBUSER Library EXEC index, Commonly Asked TapeSHARE Questions and Answers, Making TapeSHARE Work with MVS Allocation More Effectively, the NAIEXEC command glossary, and the BMC Software Subsystem Services appendix.

This manual also contains:

- A Glossary
- An Index

MAINVIEW AutoOPERATOR Product Library

MAINVIEW AutoOPERATOR is available with seven options:

- MAINVIEW AutoOPERATOR for OS/390
- MAINVIEW AutoOPERATOR for IMS
- MAINVIEW AutoOPERATOR for CICS
- MAINVIEW AutoOPERATOR Access NV
- MAINVIEW AutoOPERATOR TapeSHARE
- MAINVIEW AutoOPERATOR for MQSeries
- MAINVIEW AutoOPERATOR Elan Workstation

The base product and these options are documented in the following MAINVIEW AutoOPERATOR manuals:

- *MAINVIEW AutoOPERATOR Customization Guide*
- *MAINVIEW AutoOPERATOR Basic Automation Guide*
- *MAINVIEW AutoOPERATOR Advanced Automation Guide for CLIST EXECs*
- *MAINVIEW AutoOPERATOR Advanced Automation Guide for REXX EXECs*
- *MAINVIEW AutoOPERATOR Options User Guide*
- *MAINVIEW AutoOPERATOR for MQSeries Installation and User Guide*
- *MAINVIEW AutoOPERATOR Reference Summary*
- *MAINVIEW AutoOPERATOR Solutions Guide*

Recommended Reading

There is no recommended reading.

Related Reading

For information about the BBI online environment, refer to:

- *MAINVIEW Common Customization Guide*
- *MAINVIEW Administration Guide*
- *Using MAINVIEW*

Also, refer to “MAINVIEW AutoOPERATOR Product Library” on page xxi for a list of the manuals that document the MAINVIEW AutoOPERATOR product.

This manual refers to the BMC Software MAINVIEW Solutions product, which is documented in the *MAINVIEW AutoOPERATOR Solutions Guide*.

The MAINVIEW AutoOPERATOR for IMS option works with the IMF online products. The IMF online products are documented in the following BMC Software manuals:

- MAINVIEW for IMS Online - Analyzers Reference Manual
- MAINVIEW for IMS Online - Monitors and Traces Reference Manual

This manual also refers to the following IBM publications:

- *IMS Messages and Codes Reference Manual*
- *VTAM Messages and Codes*
- *MVS/XA SPL System Macros and Facilities*

What the Conventions Are

The following syntax notation is used in this manual. Do not enter the special characters.

- Brackets, [], enclose optional parameters or keywords.
- Braces, { }, enclose a list of parameters; one must be chosen.
- A vertical line, |, separates alternative options; one can be chosen.
- An *italicized* or underlined parameter is the default.
- AN ITEM IN CAPITAL LETTERS must be entered exactly as shown.
- Items in lowercase letters are values you supply.

Part 1. Using MAINVIEW AutoOPERATOR TapeSHARE to Manage Tape Device Sharing

This part describes the MAINVIEW MAINVIEW AutoOPERATOR TapeSHARE component (also referred to simply as AutoOPERATOR TapeSHARE) and how to use it.

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Chapter 1. What MAINVIEW AutoOPERATOR TapeSHARE Is and How It Works

This chapter describes the MAINVIEW AutoOPERATOR TapeSHARE component (referred to simply as TapeSHARE or AutoOPERATOR TapeSHARE) and includes the following discussions.

| To Read About... | See page... |
|---|-------------|
| “What You Need to Use AutoOPERATOR TapeSHARE” | 3 |
| “Defining TapeSHARE Terms and Concepts” | 4 |
| “When TapeSHARE Cannot Satisfy a Request” | 5 |
| “What You Can Tell TapeSHARE about Tape Devices (Optional)” | 7 |
| “Examples of TapeSHARE at Work” | 10 |

What You Need to Use AutoOPERATOR TapeSHARE

MAINVIEW AutoOPERATOR TapeSHARE is a MAINVIEW AutoOPERATOR component that automates the process of sharing/passing tape devices between MVS images. To use TapeSHARE, the prerequisites are as follows:

- MAINVIEW AutoOPERATOR for OS/390 must be installed.
- You must have a password key for the MAINVIEW AutoOPERATOR TapeSHARE product option.

As with other AutoOPERATOR components, TapeSHARE requires a password key before it can be activated. You must acquire a password key for every CPU that you plan to install TapeSHARE on.

For information about acquiring and using a password key, refer to the *MAINVIEW Common Customization Guide*.

Once TapeSHARE is implemented, it can operate entirely behind the scenes and does not require manual intervention. Most importantly, TapeSHARE is designed to be installed simply and implemented at your site **with no customization required**.

To best understand how to implement and use TapeSHARE, you must understand the following concepts:

- TapeSHARE
- TapeSHARE PLEX
- GIVE
- TAKE

These terms are described in “Defining TapeSHARE Terms and Concepts” on page 4.

Defining TapeSHARE Terms and Concepts

The following describes key TapeSHARE terms and concepts.

| What the MAINVIEW AutoOPERATOR TapeSHARE Component Is

| MAINVIEW AutoOPERATOR TapeSHARE is a MAINVIEW AutoOPERATOR component that automates the process of sharing/passing tape devices between MVS images.

TapeSHARE runs in an BBI-SS PAS and each MVS image can have only one TapeSHARE running at any time. Therefore, once TapeSHARE is activated in an image, if you attempt to start another TapeSHARE in the same image on another BBI-SS PAS, a warning message is issued and the attempt fails. The BBI-SS PAS continues to initialize.

TapeSHARE includes an operator control display (OCD) that allows you to see the tape sharing activity and have a single point-of-control for tape device management.

You also can track and measure shared tape activity with the AutoOPERATOR Automation Reporter application which gathers data for items such as how many requests are made for devices and how long it took for TapeSHARE to respond to the request.

What a TapeSHARE PLEX Is

A TapeSHARE PLEX is a group of MVS images, each of which has TapeSHARE active. In this environment, tape devices can be shared between the images within the TapeSHARE PLEX. The images sometimes are referred to as “partners” in the PLEX.

During TapeSHARE initialization, a TapeSHARE component informs the other TapeSHAREs in the PLEX that it is active and can share its tape devices with the other images in the PLEX.

Important Note

Make sure all available tape devices in the TapeSHARE PLEX have the same device address defined on all the images in the PLEX. For example, device 0123 should be defined as 0123 on all partners in the PLEX.

If the device addresses are different on different images, you must exclude these devices from TapeSHARE control by defining them as NOGIVE-NOTAKE. Those tape devices will not be available for sharing by the TapeSHARE PLEX. For more information, refer to “Defining NOGIVE-NOTAKE Devices” on page 46.

What TapeSHARE Does

When there are not enough devices on a particular image to satisfy the needs of a job that is running on the image, the job goes into Allocation Recovery. TapeSHARE is invoked when an Allocation Recovery situation occurs. It attempts to locate available devices from the other partners in the TapeSHARE PLEX that can be shared so the job can continue to run.

When TapeSHARE automates this sharing of tape devices within the PLEX, it is performing two important actions:

- GIVE
- TAKE

GIVE

A GIVE happens when TapeSHARE becomes aware that a job in an MVS image within the TapeSHARE PLEX requires a tape device but none are available on that image. TapeSHARE attempts to find an available device from one of the partners within the PLEX. To be eligible to be shared, the tape device must be both:

- Online
- Not allocated

When TapeSHARE finds a tape device that meets both these conditions, it makes the device available to be used by another partner in the TapeSHARE PLEX by VARYing it offline. This is a GIVE.

In summary, during a GIVE, TapeSHARE VARYs the tape device offline to one system, thereby allowing another system within the PLEX to TAKE it.

TAKE

After a GIVE, when TapeSHARE has located a device from one of the partners in the PLEX, a TAKE occurs when TapeSHARE informs MVS that the device is available. During a successful TAKE, the job that needs the device receives it from TapeSHARE and completes its job.

When TapeSHARE Cannot Satisfy a Request

If any of the following situations are true, TapeSHARE will not be able to satisfy a request for tape devices:

- There are not enough available devices within the PLEX to satisfy a request

This can occur because:

- There simply are not enough available devices within the PLEX for all requests to be satisfied.
- TapeSHARE has been customized to match the type of tape devices it finds with the type of tape devices that are requested by a job. This is called Preferencing.

When Preferencing is in effect, there may be available devices within the PLEX but TapeSHARE may not be able to find the requested type of device to satisfy the request. For more information about Preferencing and how it affects the way TapeSHARE works, refer to “What Preferencing Is” on page 7.

- If all the partners within the PLEX have jobs that are in Allocation Recovery

Although this would be a very unusual circumstance, it is possible that all the partners within the PLEX will need devices and have jobs in Allocation Recovery at the same time. If this should happen, TapeSHARE will not be able to satisfy a request.

- The communication links between BBI-SS PASs have been stopped

TapeSHARE is installed in one BBI-SS PAS in an image. When you have a PLEX of images, the BBI-SS PASs communicate with each other by way of SS-to-SS communication links.

Therefore, TapeSHARE uses SS-to-SS communication and if the communication link between two partners has been stopped (for example, if the link has been stopped manually), TapeSHARE will not be able to communicate with that partner. If the communication links between all partners in a PLEX have stopped, TapeSHARE will not be able to perform tape device sharing actions.

What You Can Do

Refer to Appendix D, “Making TapeSHARE Work with MVS Allocation More Effectively” on page 389 for more information about what you can do to make TapeSHARE work with MVS allocation.

You can customize TapeSHARE to retry looking for devices up to 10 times, waiting up to 5 minutes between attempts. In the time between attempts, the situation within the PLEX might change, allowing TapeSHARE to successfully share devices.

For more information about how to modify TapeSHARE to use the RETRYCNT and RETRYINT parameters, refer to “Specifying How Many Retries TapeSHARE Should Attempt” on page 38.

What Happens When Cannot Satisfy a Request

When TapeSHARE cannot find the tape device (or devices) to satisfy a job’s needs, an Allocation Failed Event occurs. As a result of an Allocation Failed Event, TapeSHARE can tell MVS to perform one of the following actions:

- Allow the installation’s default policy determine what to do; the default
- Issue a WTOR to inform and allow the operator to decide what to do
- Cancel the job
- Allow the job to wait without holding resources (WAIT/NOHOLD)
- Allow the job to wait while holding resources (WAIT/HOLD)

You can choose to customize TapeSHARE to take any of these actions; for more information about these options and other optional customization possibilities, refer to “Defining Actions to Take When Requests for Devices Cannot Be Met” on page 40.

What You Can Tell TapeSHARE about Tape Devices (Optional)

TapeSHARE is designed to work **without you having to perform any special implementation steps**. However, the following sections describe how to customize the way TapeSHARE performs in the TapeSHARE PLEX. These include:

- Preferencing
- Designating tape devices that should never be GIVEN by TapeSHARE to other partners in the PLEX (NOGIVE devices)
- Designating tape devices that an image will GIVE to TapeSHARE to share with other partners but will not TAKE back (NOTAKE devices)

What Preferencing Is

In TapeSHARE, you can specify that a device (or a range of devices) within the TapeSHARE PLEX is input-only or output-only. Requesting an input-only device means you are requesting a device with a specific volume serial (VOLSER) number. Requesting an output-only device is requesting a scratch tape.

If you choose to specify certain devices as input-only or output-only, you can then activate a TapeSHARE feature called “Preferencing”. Preferencing means that TapeSHARE will check the type of the device it finds and determine whether or not that device should be GIVEN to a partner.

Preferencing can be activated in one of two modes and TapeSHARE uses the mode to determine whether or not to GIVE input-only or output-only devices under different circumstances. The two modes are:

- Guideline

In Guideline mode, TapeSHARE always attempts to match the requested device with an available device but if an appropriate match cannot be made, TapeSHARE will mismatch the requested device with the available device. So if SYSA needs an input-only device but TapeSHARE finds only a device that has been specified as an output-only device, the device is GIVEN.

- Force

If Force mode is in effect, TapeSHARE never mismatches device types and for the scenario above, the output-only device is not GIVEN and an Allocation Failed Event occurs.

Regardless of which mode is in use, with Preferencing in effect TapeSHARE always checks how the device is specified (input- or output-only) on an image and uses that information to determine if it should be GIVEN to a partner. The following illustrate how Preferencing works with Guideline and Force modes.

Scenario 1: Suppose Preferencing is activated in Force mode and a job requires an input-only device. The only available device that TapeSHARE locates is specified as an output-only device.

In this situation, TapeSHARE will not GIVE the device to the job and if no retry attempts are specified, an Allocation Failed Event occurs. TapeSHARE performs the action associated with an Allocation Failed Event.

Scenario 2: With Preferencing activated in Guideline mode, in the same situation as above, TapeSHARE will GIVE the device to the job even though the two device definitions do not match. If TapeSHARE finds one output-only and one input-only device, the input-only device will be GIVEN to the job.

Scenario 3: For this scenario, suppose Preferencing is activated in Guideline mode and a job requires five output-only tape devices. TapeSHARE finds four output-only devices and one input-only device. In Guideline mode, all five of the devices will be GIVEN to the job.

Had Force mode been active in this situation, the job would receive the four available devices. If no retry attempts are specified, an Allocation Failed Event occurs for the fifth device that was not found. TapeSHARE performs the action associated with an Allocation Failed Event.

Scenario 4: For this example, Preferencing is in effect in Force mode. It is possible that a device may be defined as an input-only device on one image and as an output-only device on another image. Suppose that a device (whose address is 03E4) is defined as input-only on SYSA and as output-only on SYSB.

SYSC requires an output-only device and TapeSHARE checks partner SYSA first. On SYSA, device 03E4 is defined as input-only (and because Preferencing is on in Force mode), the device is not GIVEN to SYSC.

TapeSHARE proceeds to partner SYSB where the device is defined as output-only. TapeSHARE now GIVES the device to SYSC.

For more information about how to specify devices as input-only or output-only, or how to implement Preferencing, refer to “Customizing TapeSHARE (Optional)” on page 31.

Designating Tape Devices Dedicated to One Image (NOGIVE Devices)

You can specify that some tape devices within the TapeSHARE PLEX are not eligible to be GIVEN by TapeSHARE when jobs within the PLEX require a device. These are called NOGIVE devices.

A NOGIVE device is dedicated to an image and TapeSHARE never will try to share this device with other partners in the PLEX. You may want to have NOGIVE devices for an image that performs a lot of batch job processing.

Note: An operator can still manually VARY a device ONLINE to an image. Once a device is manually VARIED ONLINE, TapeSHARE is able to control the allocation of the device.

However, if you manually VARY a device OFFLINE, TapeSHARE will not automatically VARY it ONLINE for you. You will have to VARY it ONLINE to return it to TapeSHARE control.

Excluding Tape Devices from an Image (NOTAKE Devices)

You can specify that a tape device on an image is a NOTAKE device. This means that the device will not be used on that image but it may be GIVEN by TapeSHARE to another partner in the

PLEX. Once the NOTAKE device is GIVEN to another partner, the original image will never TAKE the device back.

Designating Tape Devices to be Excluded from TapeSHARE Control (NOGIVE-NOTAKE Devices)

You also can specify that some tape devices within the TapeSHARE PLEX are not within TapeSHARE control. These are called NOGIVE-NOTAKE devices. You may want to have NOGIVE-NOTAKE devices when you are performing maintenance on the system and the tape devices should be excluded completely from TapeSHARE control.

Additional Optional Customization Possibilities

For more information about implementing any of the optional features, use the following table.

| For more information about... | See page... |
|---|-------------|
| Specifying partners within the TapeSHARE PLEX | 33 |
| How much time TapeSHARE should wait for a successful GIVE to complete | 37 |
| How many times TapeSHARE should attempt to GIVE devices (and how long TapeSHARE should wait between attempts) | 38 |
| Actions that should be taken when an Allocation Failure Event occurs | 40 |
| How to designate NOGIVE or NOTAKE devices | 42 and 44 |
| How to designate NOGIVE-NOTAKE devices | 46 |
| How to designate tape devices with the TapeSHARE PLEX as input-only or output-only | 50 |
| How to turn on Preferencing | 52 |
| Specifying a user-defined deallocation procedure | 54 |

Examples of TapeSHARE at Work

The following scenarios describe how TapeSHARE operates in different situations. Scenario 1: How TapeSHARE Shares Tape Devices Between Targets

In this scenario, there are three images in the TapeSHARE PLEX: SYSA, SYSB, and SYSC. A job named ABC is running on SYSA and requests three tape devices but only one is available on SYSA. Job ABC goes into Allocation Recovery and SYSA TapeSHARE is invoked automatically to find the two other devices from other images within the PLEX.

The following lists the order that events occur when TapeSHARE attempts to find a device for a partner in the TapeSHARE PLEX.

1. Because Job ABC needs to find two other devices, SYSA TapeSHARE is invoked and begins to search the other partners within the TapeSHARE PLEX for available devices to be used for Job ABC.
2. SYSA TapeSHARE asks partner SYSB to GIVE two devices from its list of devices.
3. SYSB TapeSHARE searches the list for available devices that can be GIVEN to SYSA.
SYSB TapeSHARE finds a device that is both online and not allocated to a job and VARYs the device offline. This is a GIVE.
4. SYSA TapeSHARE receives permission to TAKE the device from SYSB TapeSHARE and TAKES it.
SYSA still needs one more device.
5. SYSA TapeSHARE asks partner SYSC to GIVE one device from its list of devices.
6. SYSC TapeSHARE searches the list for an available device that can be GIVEN to SYSA.
SYSC TapeSHARE finds a device that is both online and not allocated to a job and VARYs the device offline. This is a GIVE.
7. SYSA TapeSHARE receives permission to TAKE the device from SYSC and TapeSHARE TAKES it.

The Job ABC on SYSA now has all the devices it needs to complete its task.

Scenario 2: What Happens When There Aren't Enough Tape Devices

In this scenario (as in Scenario 1), there are three images in the TapeSHARE PLEX: SYSA, SYSB, and SYSC. A job named ABC is running on SYSA and requests three tape devices but only one is available on SYSA. Job ABC goes into Allocation Recovery and SYSA TapeSHARE is invoked automatically to find the two other devices from other partners within the PLEX.

The following lists the order that events occur when TapeSHARE cannot meet a partner's request for devices.

1. Steps 1 through 5 are the same as in Scenario 1.
2. SYSC TapeSHARE searches the list for an available device but **does not** find a device that can be GIVEN to SYSA.
3. Because the request for devices for Job ABC on SYSA cannot be met by the partners in the PLEX (and no retries are specified), an Allocation Failed Event occurs and the user-specified action associated with this event is taken.

Scenario 3: What Happens When MVS Crashes

In this scenario (as in Scenario 1), there are three images in the TapeSHARE PLEX: SYSA, SYSB, and SYSC. MVS on SYSC crashes with three tape devices online (which is the same as if the BBI-SS PAS with TapeSHARE running had crashed on SYSC).

The following lists the order that events occur when a partner within the PLEX crashes.

1. SYSC comes down while tape devices AB0, AB3, and ABE are online.
2. Job XYZ001 starts on SYSB and requires three tape devices but none are available.
3. SYSB TapeSHARE asks SYSC TapeSHARE for any available devices but determines that SYSC is down.

SYSB TapeSHARE marks SYSC as "dead".
4. SYSB TapeSHARE then asks SYSA TapeSHARE for any available devices.
5. SYSA TapeSHARE GIVES three devices to SYSB, and Job XYZ001 can complete its task.
6. The operator notices that three devices are offline to all systems so the operator VARYs them online.
7. SYSC is IPLed and TapeSHARE is initialized.

SYSC TapeSHARE informs the other partners within the PLEX that it is back.
8. When SYSB TapeSHARE recognizes that SYSC TapeSHARE is back up, it marks SYSC "alive".
9. SYSC TapeSHARE informs SYSA TapeSHARE that it is up and running.
10. SYSA TapeSHARE recognizes SYSC TapeSHARE and the PLEX is active again.

Chapter 2. Controlling Tape Activity from a Single Point with TapeSHARE

TapeSHARE provides the TapeSHARE Workstation panel (Figure 1) which allows you to both monitor and control all tape device sharing activity from a single panel. This panel shows tape sharing activity for all the MVS images that are in the TapeSHARE PLEX.

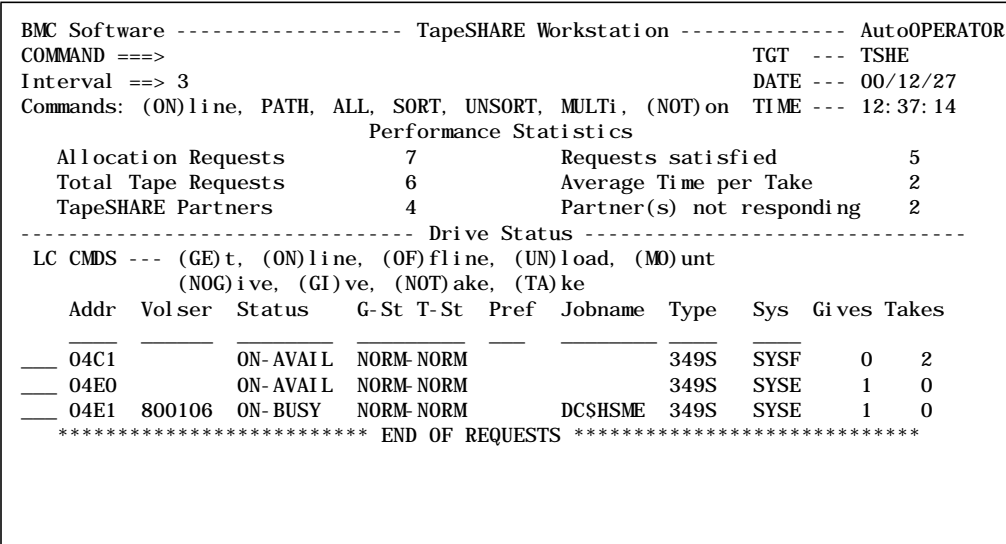


Figure 1. Example of the TapeSHARE Workstation Panel

This panel is divided into two parts: Performance Statistics and Drive Status. With these two areas, you can see both statistics about tape sharing automation and the MVS and TapeSHARE status of individual devices within the PLEX.

Accessing the TapeSHARE Workstation Panel

This section describes how to access and use the TapeSHARE Workstation panel. From the MAINVIEW AutoOPERATOR Primary Option Menu panel, select Option 6 TapeSHARE (see Figure 2).

```
BMC Software ----- PRIMARY OPTION MENU ----- AutoOPERATOR
OPTION ==> 6                                     DATE -- 01/01/10
                                                TIME -- 15:55:55
                                                USERID -- BAOMXY2
                                                MODE -- ISPF 4.8

Operator Workstations:
  1 ALERT Management                      5 NetView Resources
  2 MVS Resources                        6 TapeSHARE
  3 CICS Resources                      7 MQSeries
  4 IMS Resources

Automation:
  8 Basic and Advanced Automation        9 Dynamic Parameter Manager

General Services:
  C Service Refresh Cycle Setup          K Current PF Key Assignments
  L Display Journal                     T Tutorials
  M Display Messages and Codes          X Terminate

                                   PF1/13 HELP PF3/15: EXIT

                                   Copyright 2000, BMC Software, Inc. All rights reserved.
```

Figure 2. Selecting Option 6 from the MAINVIEW AutoOPERATOR Primary Option Menu

The TapeSHARE Workstation panel is displayed (Figure 3).

```
BMC Software ----- TapeSHARE Workstation ----- AutoOPERATOR
COMMAND ==>                                     TGT --- TSHE
Interval ==> 3                                  DATE --- 00/12/27
Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on TIME --- 12:37:14

                                   Performance Statistics
Allocation Requests          7           Requests satisfied          5
Total Tape Requests          6           Average Time per Take        2
TapeSHARE Partners           4           Partner(s) not responding    2

----- Drive Status -----
LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt
              (NOG)ive, (GI)ve, (NOT)ake, (TA)ke
Addr  Volser  Status  G-St T-St  Pref  Jobname  Type  Sys  Gives Takes
---  ---  ---  ---  ---  ---  ---  ---  ---  ---  ---
04C1  ---  ON-Avail  NORM-NORM  ---  ---  349S  SYSF  0  2
04E0  ---  ON-Avail  NORM-NORM  ---  ---  349S  SYSE  1  0
04E1  800106  ON-Busy  NORM-NORM  ---  DCSHSME  349S  SYSE  1  0
***** END OF REQUESTS *****
```

Figure 3. Displaying the TapeSHARE Workstation Panel

Primary commands: Using the primary commands on this panel, you can modify the way information is arranged in the display. Refer to Table 1 on page 25 for more information about the primary commands.

Line commands: Issuing line commands against specific devices allows you to control and change both the MVS status and the TapeSHARE status of a device. Refer to Table 2 on page 26 for more information about the line commands.

The following sections describe the different ways you can use the TapeSHARE Workstation to monitor and control tape sharing activity from the Workstation.

Viewing TapeSHARE Performance

The following shows the Performance Statistics portion of the TapeSHARE Workstation panel.

| | | | |
|------------------------|---|---------------------------|---|
| ⋮ | | | |
| Performance Statistics | | | |
| Allocation Requests | 7 | Requests satisfied | 5 |
| Total Tape Requests | 6 | Average Time per Take | 2 |
| TapeSHARE Partners | 4 | Partner(s) not responding | 2 |
| ⋮ | | | |

Use this portion of the panel when you are trying to evaluate how well TapeSHARE is operating on your system and to give you an overall sense of how much tape sharing activity is occurring on your systems. The Performance Statistics fields show:

Field Name Description

Allocation Requests/Requests Satisfied

How many allocation requests have been made by jobs requesting devices from other partners in the PLEX and were satisfied. This count includes DASD requests as well as tape requests.

Total Tape Requests

Total number of tape devices obtained by TapeSHARE.

Avg Time per Take

Average time (in seconds) TapeSHARE took to complete a request

TapeSHARE Partners/Partner(s) not responding

Number of partners in the PLEX and the number of partners that are not responding

In general, the figures shown in the Performance Statistics portion of the Workstation are useful after you have determined what is the average amount of TapeSHARE activity. Then, if there should be a change in the statistics, you can have better sense of whether or not the changes are due to an abnormal condition or if it is an expected and acceptable amount.

The following scenarios describe situations that you can identify with the Performance Statistics fields.

Scenario 1: Determining If You Have Enough Drives

You can use the two fields `Allocation Requests` and `Requests Satisfied` to see if you have enough devices within your TapeSHARE PLEX. For example, there may be 20 Allocation Requests and only 3 have been satisfied as shown in this figure:

| | | | | |
|---|------------------------|----|---------------------------|---|
| : | Performance Statistics | | | |
| | Allocation Requests | 20 | Requests satisfied | 3 |
| | Total Tape Requests | 6 | Average Time per Take | 2 |
| | TapeSHARE Partners | 4 | Partner(s) not responding | 2 |
| : | | | | |

If for your site this discrepancy is consistently too large, it may be that there are not enough tape devices available in the TapeSHARE PLEX to be shared by all the partners. Or it may be that this number simply has increased due to an increase in the amount of jobs that require sharing devices.

Scenario 2: Are All the Partners Responding

Another important aspect of TapeSHARE performance is how many partners are defined in the TapeSHARE PLEX and how many actually are responding. This can be seen by the two fields `Partners defined in Plex` and `Partner(s) not responding`.

| | | | | |
|---|------------------------|----|---------------------------|----|
| : | Performance Statistics | | | |
| | Allocation Requests | 20 | Requests satisfied | 10 |
| | Total Tape Requests | 6 | Average Time per Take | 2 |
| | TapeSHARE Partners | 4 | Partner(s) not responding | 2 |
| : | | | | |

Partners within the TapeSHARE PLEX depend on BBI SS PAS-to-SS PAS communication and if there is a sudden large change in the difference between these numbers, it may be that the BBI-SS PAS to BBI-SS PAS communication between images has somehow been stopped. You will want to determine if this is the case and then take steps to fix this situation.

If you use TapeSHARE in its default state: When you install TapeSHARE on multiple images of the TapeSHARE PLEX in its default state (without customization), every BBI node defined in the BBINOD00 table is defined as a partner in the PLEX and this number may not be an accurate reflection of how many MVS images are actually partners in the PLEX.

If you do not want every BBI node to be a defined partner of the TapeSHARE PLEX, you should use the Dynamic Parameter Manager application and add the partners with the `PARTNERS=` parameter. For more information, refer to “Defining TapeSHARE Partners” on page 33.

Viewing Drive Status

The following shows the Drive Status portion of the TapeSHARE Workstation panel.

⋮

----- Drive Status -----

LC CMDS --- (GE)t, (ON)l i ne, (OF)l i ne, (UN)l oad, (MO)unt
(NOG) i ve, (GI) ve, (NOT) ake, (TA) ke

| Addr | Volser | Status | G-St | T-St | Pref | Jobname | Type | Sys | Gives | Takes |
|------|--------|-----------|-------|------|------|---------|------|------|-------|-------|
| 04C1 | | ON- AVAIL | NORM- | NORM | | | 349S | SYSF | 0 | 2 |
| 04E0 | | ON- AVAIL | NORM- | NORM | | | 349S | SYSE | 1 | 0 |
| 04E1 | 800106 | ON- BUSY | NORM- | NORM | | DCSHSME | 349S | SYSE | 1 | 0 |

***** END OF REQUESTS *****

Use this portion of the panel to see both the MVS and TapeSHARE status of all the devices on all the partners within the TapeSHARE PLEX. You can modify and perform tape device management with the line commands that allow you to modify both the MVS and the TapeSHARE status of a specific device. The Drive Status fields show:

| Field Name | Description |
|------------|--|
| Addr | Device addresses for all the devices within the PLEX |
| Volser | Volume serial number (VOLSER) of the currently allocated or mounted volume |
| Status | Current MVS status of the device |
| G-St T-St | Current TapeSHARE status of the device; in other words, allows you to see the GIVE and TAKE status of the device |
| Pref | Specifies if the device has been defined as input-only or output-only |
| Jobname | Job name of the job using devices |
| Type | Type of device |
| Sys | Shows the SMF system name of the partner |
| Gives | Number of times a device has been GIVEN |
| Takes | Number of times a device has been TAKEN |

There are three important things to note about this portion of the panel:

- What the Sys column shows
- What different colors mean
- How the line commands (GE)t, (ON)l i ne, (OF)l i ne, (UN)l oad, and (MO)unt work

The Sys column: Using the primary command ALL shows the status for all the devices and their relationship to each of the partners within the PLEX (see Figure 4).

| | | | | | | | | | | | | | |
|---|------|--------|-----------|-------|-------|------|---------|---------------------------|------|--------|-------|---|--|
| BMC Software ----- TapeSHARE Workstation ----- AutoOPERATOR | | | | | | | | | | | | | |
| COMMAND ==> | | | | | | | | TGT ==> TSHE | | | | | |
| Interval ==> 3 | | | | | | | | DATE --- 00/12/11 | | | | | |
| Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on | | | | | | | | TIME --- 13: 59: 12 | | | | | |
| Performance Statistics | | | | | | | | | | | | | |
| Allocation Requests | | | | 10 | | | | Requests satisfied | | | | 5 | |
| Total Tape Requests | | | | 5 | | | | Average Time per Take | | | | 1 | |
| TapeSHARE Partners | | | | 6 | | | | Partner(s) not responding | | | | 3 | |
| ----- Tape Status ----- | | | | | | | | | | | | | |
| LC CMDS --- (GE)t, (ON)line, (OF)fl ine, (UN)load, (MO)unt | | | | | | | | | | | | | |
| (NOG)ive, (GI)ve, (NOT)ake, (TA)ke | | | | | | | | | | | | | |
| | Addr | Volser | Status | G- St | T- St | Pref | Jobname | Type | Sys | Gi ves | Takes | | |
| --- | 04C0 | | ON- AVAIL | NORM- | NORM | | | 349S | SYSD | 1 | 2 | | |
| --- | 04C0 | | OFFLI NE | NORM- | NORM | | | 349S | SYSE | 1 | 0 | | |
| --- | 04C0 | | OFFLI NE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04C1 | | OFFLI NE | NORM- | NORM | | | 349S | SYSD | 1 | 1 | | |
| --- | 04C1 | | ON- AVAIL | NORM- | NORM | | | 349S | SYSE | 0 | 0 | | |
| --- | 04C1 | | OFFLI NE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |

Figure 4. Using the ALL Primary Command

Note that device 04C0 appears three times; once for each partner SYSD, SYSE, and SYSF. The current status of device 04C0 is shown once for partner and the Sys column shows the SMF system name of the partner.

What different colors mean: TapeSHARE uses three colors to help you see the status of the devices:

| Color | Description |
|-------|-------------------------------------|
| Blue | Device is ONLINE |
| White | Device is OFFLINE |
| Red | Device requires manual intervention |

In Figure 4 on a color display, ON- AVAIL would be blue (ONLINE) and all the other lines would be white (OFFLINE). No devices require manual intervention so there are no lines in red.

How the line commands work: When you use the line commands (GE)t, (ON)l i ne, (OF)l i ne, (UN)l oad, and (MO)unt, the commands are executed asynchronously. Therefore, you may have to press ENTER a few times before you see the result of the command displayed on the panel.

To see the response of the command, you can look at the BBI-SS PAS Journal log of the system where the command was executed.

The line commands (NOG) i ve, (GI) ve, (NOT) ake, and (TA) ke are executed synchronously and when you use them, the change is reflected immediately in the display.

Scenario 1: Modifying the Drive Status Display

You can modify the data displayed in the Drive Status portion of the display in one of two ways:

- Using the primary commands (described in Table 1 on page 25)
- Using the fields below the column headings to qualify (or mask) the display; for example:

```

:
----- Drive Status -----
LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt
              (NOG)ive, (GI)ve, (NOT)ake, (TA)ke
  Addr  Volser  Status  G-St T-St  Pref  Jobname  Type  Sys  Gives Takes
-----
  04C1      ON- A      NORM- NORM
  04E0      ON- A      NORM- NORM
  349S      SYSE      1      0
  349S      SYSE      0      2
  
```

Entering ON- A under the St at us column and pressing ENTER shows all the devices that have a MVS status of ONLINE and AVAILABLE.

Scenario 2: Viewing Devices that Require Manual Intervention

As discussed on page 18, the color red is used to show devices that require operator intervention. On the TapeSHARE Workstation panel, you easily can see all the devices for all the partners in the PLEX that require operator intervention.

To see these devices, enter the primary command:

SORT STATUS D

Figure 5 is displayed.

```

BMC Software ----- TapeSHARE Workstation ----- AutoOPERATOR
COMMAND ==>
Interval ==> 3
Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on
Performance Statistics
Allocation Requests      16      Requests satisfied      9
Total Tape Requests      9      Average Time per Take      2
TapeSHARE Partners      6      Partner(s) not responding      3
----- Tape Status -----
LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt
              (NOG)ive, (GI)ve, (NOT)ake, (TA)ke
  Addr  Volser  Status  G-St T-St  Pref  Jobname  Type  Sys  Gives Takes
-----
  04C0  802749  ON- MOUNT  NORM- NORM      DCSHSMD  349S  SYSD      2      3
  04E0      ON- A      NORM- NORM      349S  SYSE      0      3
  04C1      ON- A      NORM- NORM      349S  SYSE      0      0
  04E1      OFFLI NE  NORM- NORM      349S  SYSE      0      0
  04E1      OFFLI NE  NORM- NORM      349S  SYSE      0      0
  04E1      OFFLI NE  NORM- NORM      349S  SYSE      1      1
  04E0      OFFLI NE  NORM- NORM      349S  SYSE      0      0
  04E0      OFFLI NE  NORM- NORM      349S  SYSE      4      0
  
```

Figure 5. Viewing Devices That Require Manual Intervention

The first line of the display shows device 04C0 is waiting for a device to be mounted. This line (on a color display) would appear in red.

Scenario 3: Viewing Devices that Are ONLINE to More Than One Partner

The MULTI primary command allows you to see if there are devices that are ONLINE to more than one partner at a time. This is a very unusual circumstance but it can arise if an operator inadvertently manually VARYs a device online when it is already ONLINE. If TapeSHARE is performing all the sharing activity, this situation should never arise.

| | | | | | | | | | | |
|---|--|--------|----------|-------|---------------------------|------|-------------------|------|------|-------------|
| BMC Software ----- TapeSHARE Workstation ----- | | | | | | | AutoOPERATOR | | | |
| COMMAND ==> | | | | | | | TGT ==> TSHE | | | |
| Interval ==> 3 | | | | | | | DATE --- 00/12/10 | | | |
| Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on | | | | | | | TIME --- 11:50:33 | | | |
| Performance Statistics | | | | | | | | | | |
| Allocation Requests | | | 5 | | Requests satisfied | | | 3 | | |
| Total Tape Requests | | | 3 | | Average Time per Take | | | 1 | | |
| TapeSHARE Partners | | | 6 | | Partner(s) not responding | | | 3 | | |
| ----- Tape Status ----- | | | | | | | | | | |
| LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt | | | | | | | | | | |
| (NOG)ive, (GI)ve, (NOT)ake, (TA)ke | | | | | | | | | | |
| Addr | | Volser | Status | G-St | T-St | Pref | Jobname | Type | Sys | Gives Takes |
| --- | | 04C0 | ON-AVAIL | NORM- | NORM | --- | --- | 349S | SYSE | 1 0 |
| --- | | 04C0 | ON-AVAIL | NORM- | NORM | --- | --- | 349S | SYSF | 0 0 |
| ***** END OF REQUESTS ***** | | | | | | | | | | |

If this situation should arise, you should immediately determine which partner should have the device and then issue the OF line command against the device on the partner that should not have it.

Scenario 4: Viewing Devices that Are Not Available

The primary command NOTON shows all the devices that have valid paths but are not currently ONLINE to any of the partners within the PLEX; for example:

| | | | | | | | | | | |
|---|--------|---------|-------|---------------------------|------|---------|------|------|-------|-------|
| BMC Software ----- TapeSHARE Workstation ----- | | | | INVALID COMMAND | | | | | | |
| COMMAND ==> | | | | TGT ==> TSHE | | | | | | |
| Interval ==> 3 | | | | DATE --- 00/12/10 | | | | | | |
| Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on | | | | TIME --- 11:47:53 | | | | | | |
| Performance Statistics | | | | | | | | | | |
| Allocation Requests | | 5 | | Requests satisfied | | 3 | | | | |
| Total Tape Requests | | 3 | | Average Time per Take | | 1 | | | | |
| TapeSHARE Partners | | 6 | | Partner(s) not responding | | 3 | | | | |
| ----- Tape Status ----- | | | | | | | | | | |
| LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt | | | | | | | | | | |
| (NOG)ive, (GI)ve, (NOT)ake, (TA)ke | | | | | | | | | | |
| Addr | Volser | Status | G-St | T-St | Pref | Jobname | Type | Sys | Gives | Takes |
| --- | 04D1 | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 0 |
| --- | 04D1 | OFFLINE | NORM- | NORM | | | 349S | SYSE | 0 | 0 |
| --- | 04D1 | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 |
| --- | 04E0 | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 0 |
| --- | 04E0 | OFFLINE | NORM- | NORM | | | 349S | SYSE | 0 | 0 |
| --- | 04E0 | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 |
| ***** END OF REQUESTS ***** | | | | | | | | | | |

This example shows that two devices, 04D1 and 04E0, are OFFLINE to every partner in the PLEX. This may indicate that the device is OFFLINE because:

- It was manually VARIED OFFLINE and never VARIED ONLINE
- It is being used by a non-PLEX partner

You should determine if you need to VARY the device ONLINE.

Scenario 5: Getting a Device

The GET line command allows you to VARY a device offline from one partner and then online to another partner with a single command.

Issue the primary command PATH to see all the devices with valid paths for all partners and their ONLINE and OFFLINE devices. The following shows the display after PATH is issued.

| | | | | | | | | | | | | | |
|---|------|--------|----------|-----------------------------|------|------|---------|---------------------------|------|-------|-------|---|--|
| BMC Software ----- | | | | TapeSHARE Workstation ----- | | | | AutoOPERATOR | | | | | |
| COMMAND ==> | | | | | | | | TGT ==> TSHE | | | | | |
| Interval ==> 3 | | | | | | | | DATE --- 00/12/10 | | | | | |
| Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on | | | | | | | | TIME --- 11:48:31 | | | | | |
| Performance Statistics | | | | | | | | | | | | | |
| Allocation Requests | | | | 5 | | | | Requests satisfied | | | | 3 | |
| Total Tape Requests | | | | 3 | | | | Average Time per Take | | | | 1 | |
| TapeSHARE Partners | | | | 6 | | | | Partner(s) not responding | | | | 3 | |
| ----- Tape Status ----- | | | | | | | | | | | | | |
| LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt | | | | | | | | | | | | | |
| (NOG)ive, (GI)ve, (NOT)ake, (TA)ke | | | | | | | | | | | | | |
| | Addr | Volser | Status | G-St | T-St | Pref | Jobname | Type | Sys | Gives | Takes | | |
| --- | 04C0 | | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 1 | | |
| --- | 04C0 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 1 | 0 | | |
| --- | 04C0 | | ON-Avail | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04C1 | | ON-Avail | NORM- | NORM | | | 349S | SYSD | 0 | 1 | | |
| --- | 04C1 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 1 | 0 | | |
| --- | 04C1 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04D0 | | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 0 | | |
| --- | 04D0 | | ON-Avail | NORM- | NORM | | | 349S | SYSE | 0 | 0 | | |
| --- | 04D0 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04D1 | | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 0 | | |
| --- | 04D1 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 0 | 0 | | |
| --- | 04D1 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04E0 | | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 0 | | |
| --- | 04E0 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 0 | 0 | | |
| --- | 04E0 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04E1 | | ON-Avail | NORM- | NORM | | | 349S | SYSD | 0 | 1 | | |
| --- | 04E1 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 1 | 0 | | |
| --- | 04E1 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| ***** END OF REQUESTS ***** | | | | | | | | | | | | | |

Suppose you want to use device 04C0 on SYSD and it is currently ONLINE SYSF. Enter the GE line command.

| | | | | | | | | | | | | | |
|---|------|--------|----------|-------|------|------|---------|---------------------------|------|-------------------|-------|---|--|
| BMC Software ----- TapeSHARE Workstation ----- AutoOPERATOR | | | | | | | | | | | | | |
| COMMAND ==> | | | | | | | | | | TGT ==> TSHE | | | |
| Interval ==> 3 | | | | | | | | | | DATE --- 00/12/10 | | | |
| Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on | | | | | | | | | | TIME --- 11:48:31 | | | |
| Performance Statistics | | | | | | | | | | | | | |
| Allocation Requests | | | | 5 | | | | Requests satisfied | | | | 3 | |
| Total Tape Requests | | | | 3 | | | | Average Time per Take | | | | 1 | |
| TapeSHARE Partners | | | | 6 | | | | Partner(s) not responding | | | | 3 | |
| ----- Tape Status ----- | | | | | | | | | | | | | |
| LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt | | | | | | | | | | | | | |
| (NOG)ive, (GI)ve, (NOT)ake, (TA)ke | | | | | | | | | | | | | |
| | Addr | Volser | Status | G-St | T-St | Pref | Jobname | Type | Sys | Gives | Takes | | |
| GE_ | 04C0 | | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 1 | | |
| --- | 04C0 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 1 | 0 | | |
| --- | 04C0 | | ON-AVAIL | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04C1 | | ON-AVAIL | NORM- | NORM | | | 349S | SYSD | 0 | 1 | | |
| --- | 04C1 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 1 | 0 | | |
| --- | 04C1 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04D0 | | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 0 | | |
| --- | 04D0 | | ON-AVAIL | NORM- | NORM | | | 349S | SYSE | 0 | 0 | | |
| --- | 04D0 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04D1 | | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 0 | | |
| --- | 04D1 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 0 | 0 | | |
| --- | 04D1 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04E0 | | OFFLINE | NORM- | NORM | | | 349S | SYSD | 0 | 0 | | |
| --- | 04E0 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 0 | 0 | | |
| --- | 04E0 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| --- | 04E1 | | ON-AVAIL | NORM- | NORM | | | 349S | SYSD | 0 | 1 | | |
| --- | 04E1 | | OFFLINE | NORM- | NORM | | | 349S | SYSE | 1 | 0 | | |
| --- | 04E1 | | OFFLINE | NORM- | NORM | | | 349S | SYSF | 0 | 0 | | |
| ***** END OF REQUESTS ***** | | | | | | | | | | | | | |

The device will become OFFLINE to SYSF and ONLINE to SYSD:

| | | | | | | | | | | | |
|---|------|--------|----------|-----------------------------|------|------|---------|-------------------|------|-------|-------|
| BMC Software ----- | | | | TapeSHARE Workstation ----- | | | | AutoOPERATOR | | | |
| COMMAND ==> | | | | | | | | TGT ==> TSHE | | | |
| Interval ==> 3 | | | | | | | | DATE --- 00/12/10 | | | |
| Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on | | | | | | | | TIME --- 11:49:16 | | | |
| Performance Statistics | | | | | | | | | | | |
| Allocation Requests | | 5 | | Requests satisfied | | | | 3 | | | |
| Total Tape Requests | | 3 | | Average Time per Take | | | | 1 | | | |
| TapeSHARE Partners | | 6 | | Partner(s) not responding | | | | 3 | | | |
| ----- Tape Status ----- | | | | | | | | | | | |
| LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt | | | | | | | | | | | |
| (NOG)ive, (GI)ve, (NOT)ake, (TA)ke | | | | | | | | | | | |
| | Addr | Volser | Status | G-St | T-St | Pref | Jobname | Type | Sys | Gives | Takes |
| --- | 04C0 | | ON-AVAIL | NORM | NORM | | | 349S | SYSD | 0 | 1 |
| --- | 04C0 | | OFFLINE | NORM | NORM | | | 349S | SYSE | 1 | 0 |
| --- | 04C0 | | OFFLINE | NORM | NORM | | | 349S | SYSF | 0 | 0 |
| --- | 04C1 | | ON-AVAIL | NORM | NORM | | | 349S | SYSD | 0 | 1 |
| --- | 04C1 | | OFFLINE | NORM | NORM | | | 349S | SYSE | 1 | 0 |
| --- | 04C1 | | OFFLINE | NORM | NORM | | | 349S | SYSF | 0 | 0 |
| --- | 04D0 | | OFFLINE | NORM | NORM | | | 349S | SYSD | 0 | 0 |
| --- | 04D0 | | ON-AVAIL | NORM | NORM | | | 349S | SYSE | 0 | 0 |
| --- | 04D0 | | OFFLINE | NORM | NORM | | | 349S | SYSF | 0 | 0 |
| --- | 04D1 | | OFFLINE | NORM | NORM | | | 349S | SYSD | 0 | 0 |
| --- | 04D1 | | OFFLINE | NORM | NORM | | | 349S | SYSE | 0 | 0 |
| --- | 04D1 | | OFFLINE | NORM | NORM | | | 349S | SYSF | 0 | 0 |
| --- | 04E0 | | OFFLINE | NORM | NORM | | | 349S | SYSD | 0 | 0 |
| --- | 04E0 | | OFFLINE | NORM | NORM | | | 349S | SYSE | 0 | 0 |
| --- | 04E0 | | OFFLINE | NORM | NORM | | | 349S | SYSF | 0 | 0 |
| --- | 04E1 | | ON-AVAIL | NORM | NORM | | | 349S | SYSD | 0 | 1 |
| --- | 04E1 | | OFFLINE | NORM | NORM | | | 349S | SYSE | 1 | 0 |
| --- | 04E1 | | OFFLINE | NORM | NORM | | | 349S | SYSF | 0 | 0 |
| ***** END OF REQUESTS ***** | | | | | | | | | | | |

Scenario 6: Viewing All Devices

To see all the devices for all the partners defined in the TapeSHARE PLEX, use the primary command ALL. Figure 6 shows all the devices where there are three partner in the PLEX: SYSD, SYSE, and SYSF.

| | | | | | | | | |
|--|------|--------|-----------------------------|-------|------|-----------------------------|---------|----------------------|
| BMC Software ----- | | | TapeSHARE Workstation ----- | | | AutoOPERATOR | | |
| COMMAND ==> | | | | | | TGT ==> TSHE | | |
| Interval ==> 3 | | | | | | DATE --- 00/12/10 | | |
| Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT) on | | | | | | TIME --- 11:48:10 | | |
| Performance Statistics | | | | | | | | |
| Allocation Requests | | | 5 | | | Requests satisfied 3 | | |
| Total Tape Requests | | | 3 | | | Average Time per Take 1 | | |
| TapeSHARE Partners | | | 6 | | | Partner(s) not responding 3 | | |
| ----- Tape Status ----- | | | | | | | | |
| LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt | | | | | | | | |
| (NOG)ive, (GI)ve, (NOT)ake, (TA)ke | | | | | | | | |
| | Addr | Volser | Status | G-St | T-St | Pref | Jobname | Type Sys Gives Takes |
| --- | 04C0 | | OFFLINE | NORM- | NORM | | | 349S SYSD 0 1 |
| --- | 04C0 | | OFFLINE | NORM- | NORM | | | 349S SYSE 1 0 |
| --- | 04C0 | | ON-AVAIL | NORM- | NORM | | | 349S SYSF 0 0 |
| --- | 04C1 | | ON-AVAIL | NORM- | NORM | | | 349S SYSD 0 1 |
| --- | 04C1 | | OFFLINE | NORM- | NORM | | | 349S SYSE 1 0 |
| --- | 04C1 | | OFFLINE | NORM- | NORM | | | 349S SYSF 0 0 |
| --- | 04C2 | | NOPATH | | | | | 3490 SYSD 0 0 |
| --- | 04C2 | | NOPATH | | | | | 3490 SYSE 0 0 |
| --- | 04C2 | | NOPATH | | | | | 3490 SYSF 0 0 |
| --- | 04C3 | | NOPATH | | | | | 3490 SYSD 0 0 |
| --- | 04C3 | | NOPATH | | | | | 3490 SYSE 0 0 |
| --- | 04C3 | | NOPATH | | | | | 3490 SYSF 0 0 |
| --- | 04C4 | | NOPATH | | | | | 3490 SYSD 0 0 |
| --- | 04C4 | | NOPATH | | | | | 3490 SYSE 0 0 |
| --- | 04C4 | | NOPATH | | | | | 3490 SYSF 0 0 |
| --- | 04C5 | | NOPATH | | | | | 3490 SYSD 0 0 |
| --- | 04C5 | | NOPATH | | | | | 3490 SYSE 0 0 |
| --- | 04C5 | | NOPATH | | | | | 3490 SYSF 0 0 |
| --- | 04C6 | | NOPATH | | | | | 3490 SYSD 0 0 |
| --- | 04C6 | | NOPATH | | | | | 3490 SYSE 0 0 |
| --- | 04C6 | | NOPATH | | | | | 3490 SYSF 0 0 |
| --- | 04C7 | | NOPATH | | | | | 3490 SYSD 0 0 |
| --- | 04C7 | | NOPATH | | | | | 3490 SYSE 0 0 |
| --- | 04C7 | | NOPATH | | | | | 3490 SYSF 0 0 |
| --- | 04C8 | | NOPATH | | | | | 3490 SYSD 0 0 |
| --- | 04C8 | | NOPATH | | | | | 3490 SYSE 0 0 |
| --- | 04C8 | | NOPATH | | | | | 3490 SYSF 0 0 |
| --- | 04C9 | | NOPATH | | | | | 3490 SYSD 0 0 |
| --- | 04C9 | | NOPATH | | | | | 3490 SYSE 0 0 |

Figure 6. Viewing All Devices

As you can see, there are a lot of devices that have a status of NOPATH. The ALL primary command shows all the devices, even those that may have invalid paths.

Primary Commands

Table 1 lists and describes all the primary commands you can enter on the TapeSHARE Workstation panel.

Table 1. TapeSHARE Workstation Primary Commands

| Primary Command | Description |
|-----------------|---|
| ONl i ne ON | Shows all ONLINE devices for all partners responding within the PLEX |
| PATH | Shows all devices with valid paths for all ONLINE and OFFLINE devices that are responding within the PLEX |
| ALL | Shows all devices for all partners responding within the PLEX, even devices that might have invalid paths or devices that are SYSGENed (system generated) but do not physically exist |
| SORT | <p>Sorts the display of devices to show all partners responding within the PLEX</p> <p>Use the SORT primary command with the following column headings:</p> <ul style="list-style-type: none">• ADDR• VOLSER• STATUS• SYS• JOBNAME• TYPE• GIVES• TAKES <p>The display is sorted by default by the ADDR column.</p> |
| UNSORT | Returns the sorted display to the default display (which is sorted by the ADDR column) |
| MULTI MULT | <p>Shows the devices that are online to multiple partners</p> <p>If you use this command and devices are shown to be online to more than one partner, then you must decide which system should have the drive and then issue the OF (offline) command against the systems that should not have it.</p> |
| NOTON NOT | Shows all the devices that have valid paths but are not currently online to any of the partners within the TapeSHARE PLEX |

Line Commands

Table 2 lists and describes all the line commands you can enter on the TapeSHARE Workstation panel. Note that any line command issued against a device will be issued against the system that is listed in the Sys column.

Table 2. TapeSHARE Workstation Line Commands

| Line Command | Description |
|--|---|
| GET GE | Finds the device at one of the partners and VARYs it OFFLINE and then VARYs it ONLINE. |
| ONLINE ON | Issues the VARY ONLINE command without first checking to see if the device is already ONLINE to any other system. |
| OFFLINE OF | Issues the VARY OFFLINE command against the device. |
| UNLOAD UN | Unloads (dismounts) the volume from the device. |
| MOUNT MO | Issues the MVS MOUNT command. You are then prompted for the volser (volume serial number). |
| <p>Note: Note: When you use the line commands (GE) t, (ON) l i n e, (OF) l i n e, (UN) l o a d, and (MO) u n t, the commands are executed asynchronously. Therefore, you may have to press ENTER a few times before you see the result of the command displayed on the panel.</p> <p>To see the response of the command, you can look at the BBI-SS PAS Journal log of the system where the command was executed.</p> | |
| NOGIVE NOG | Sets the device to NOGIVE status; the drive will not be GIVEN to another partner within the PLEX. The device will be dedicated to the partner it is currently on. |
| GIVE GI | Allows the device to be GIVEN to another partner. |
| NOTAKE NOT | Sets the device to NOTAKE status; the partner will not TAKE the device back. |
| TAKE TA | Allows the device to be TAKEN by another partner. |

TapeSHARE Workstation Fields

The following illustration shows the fields of the MAINVIEW AutoOPERATOR TapeSHARE Workstation panel.

```

BMC Software ----- TapeSHAREBMC Software -- Workstation -----
AutoOPERATOR
COMMAND ==> TGT --- TSHE
Interval ==> 3 DATE --- 00/12/27
Commands: (ON)line, PATH, ALL, SORT, UNSORT, MULTi, (NOT)on TIME --- 12:37:14

Performance Statistics
Allocation Requests 7 Requests satisfied 5
Total Tape Requests 6 Average Time per Take 2
TapeSHARE Partners 4 Partner(s) not responding 2

Drive Status -----
LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt
(NO)give, (GI)ve, (NOT)ake, (TA)ke

Addr Volser Status G-St T-St Pref Jobname Type Sys Gives Takes
___
04C1 ON-AVAIL NORM-NORM 349S SYSF 0 N/A
04E0 ON-AVAIL NORM-NORM 349S SYSE 1 N/A
04E1 800106 ON-BUSY NORM-NORM DCSHSME 349S SYSE 1 N/A
***** END OF REQUESTS *****

```

Figure 7. TapeSHARE Workstation Panel Fields

Performance Statistics Fields

The following table describes the fields in the Performance Statistics portion of the panel. These numbers are collected from all the partners that are responding within the TapeSHARE PLEX.

| Field Name | Description |
|-----------------------|---|
| Allocation Requests | Shows how many allocation requests have been made to TapeSHARE by jobs requesting devices from other partners in the PLEX Every time TapeSHARE must locate a device from the other partners in the PLEX for a job running on this image, the Allocation Requests value increments by 1. Therefore, for a single job, if TapeSHARE needs to look three times to locate devices for the job to complete and finds all the devices it needs, the Allocation Requests value is incremented by 3. |
| Requests Satisfied | Shows the number of Allocation Requests that TapeSHARE satisfied for this image |
| Total Device Requests | Shows the total number of devices obtained by TapeSHARE for this image For every device TapeSHARE successfully acquires for this image, this value increments by 1. Therefore, if TapeSHARE allocates 10 devices for one job, the value is incremented by 10. |
| Avg Time per Take | Shows the average time TapeSHARE took to successfully respond to an Allocation Request |

| Field Name | Description |
|---------------------------|---|
| TapeSHARE Partners | Shows the number of partners in the PLEX This is the number of BBI nodes that have the TapeSHARE component active. |
| Partner(s) not responding | Shows the number of partners within the PLEX that currently are unable to respond to this partner |

Drive Status Fields

The following illustration shows the fields in the Drive Status portion of the panel.

| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|
| <pre> : ----- Drive Status ----- LC CMDS --- (GE)t, (ON)line, (OF)fline, (UN)load, (MO)unt (NOG)ive, (GI)ve, (NOT)ake, (TA)ke Addr Vol ser Status G-St T-St Pref Jobname Type Sys Gives Takes ----- 04C1 ON- AVAIL NORM- NORM 349S SYSF 0 N/A 04E0 ON- AVAIL NORM- NORM 349S SYSE 1 N/A 04E1 800106 ON- BUSY NORM- NORM DC\$HSME 349S SYSE 1 N/A ***** END OF REQUESTS ***** </pre> | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|

You can qualify the display based on any column heading that has a line underneath it. These include:

- Addr
- Vol ser
- Status
- G-St T-St
- Pref
- Jobname
- Type
- Sys

The column headings are defined in the following table.

| Column Heading | Description |
|----------------|--|
| Addr | Shows the address of the device Note: If the system is operating at SP4.x or above, the first digit of the device address always will be a zero. |
| Vol ser | Shows the volume serial number of currently mounted volume |

| Column Heading | Description | | | | | | | | | | | | | | | | |
|----------------|--|-------------|------------|----------|---|----------|--|----------|--|-----------|--|---------|--|---------|--|--------|---|
| Status | <p>Shows the status of the device</p> <p>Possible values are:</p> <table> <thead> <tr> <th>Status name</th><th>Definition</th></tr> </thead> <tbody> <tr> <td>ON-AVAIL</td><td>Specifies this device is available and may be allocated</td></tr> <tr> <td>ON-MOUNT</td><td>Specifies there is a MOUNT PENDING and there is a tape waiting to be mounted</td></tr> <tr> <td>ON-NORDY</td><td>Specifies this device is ALLOCATED/NOT READY and that it is waiting for someone to push the READY button</td></tr> <tr> <td>ON-BUSY</td><td>Specifies this device is READING or WRITING</td></tr> <tr> <td>OFFLINE</td><td>Specifies this device is OFFLINE and the device is not currently selectable</td></tr> <tr> <td>OF-PEND</td><td>Specifies this device is OFFLINE PENDING</td></tr> <tr> <td>NOPATH</td><td>Specifies this device is in the system generation list but there is NO PATH to it</td></tr> </tbody> </table> | Status name | Definition | ON-AVAIL | Specifies this device is available and may be allocated | ON-MOUNT | Specifies there is a MOUNT PENDING and there is a tape waiting to be mounted | ON-NORDY | Specifies this device is ALLOCATED/NOT READY and that it is waiting for someone to push the READY button | ON-BUSY | Specifies this device is READING or WRITING | OFFLINE | Specifies this device is OFFLINE and the device is not currently selectable | OF-PEND | Specifies this device is OFFLINE PENDING | NOPATH | Specifies this device is in the system generation list but there is NO PATH to it |
| Status name | Definition | | | | | | | | | | | | | | | | |
| ON-AVAIL | Specifies this device is available and may be allocated | | | | | | | | | | | | | | | | |
| ON-MOUNT | Specifies there is a MOUNT PENDING and there is a tape waiting to be mounted | | | | | | | | | | | | | | | | |
| ON-NORDY | Specifies this device is ALLOCATED/NOT READY and that it is waiting for someone to push the READY button | | | | | | | | | | | | | | | | |
| ON-BUSY | Specifies this device is READING or WRITING | | | | | | | | | | | | | | | | |
| OFFLINE | Specifies this device is OFFLINE and the device is not currently selectable | | | | | | | | | | | | | | | | |
| OF-PEND | Specifies this device is OFFLINE PENDING | | | | | | | | | | | | | | | | |
| NOPATH | Specifies this device is in the system generation list but there is NO PATH to it | | | | | | | | | | | | | | | | |
| G- St T- ST | <p>Shows the TapeSHARE GIVE and TAKE status of the device</p> <p>Possible values are:</p> <table> <thead> <tr> <th>Status name</th><th>Definition</th></tr> </thead> <tbody> <tr> <td>NORM</td><td>Specifies this device is available to be GIVEN or TAKEN</td></tr> <tr> <td>NGIV</td><td>Specifies this device cannot be GIVEN to any other partner within the TapeSHARE PLEX</td></tr> <tr> <td>NTAK</td><td>Specifies that this image will not TAKE this device for use</td></tr> <tr> <td>NGIV-NTAK</td><td>Specifies this device is not available to be GIVEN or TAKE</td></tr> <tr> <td>SPEC</td><td>Specifies this device has been defined as either an input-only or output-only device</td></tr> </tbody> </table> | Status name | Definition | NORM | Specifies this device is available to be GIVEN or TAKEN | NGIV | Specifies this device cannot be GIVEN to any other partner within the TapeSHARE PLEX | NTAK | Specifies that this image will not TAKE this device for use | NGIV-NTAK | Specifies this device is not available to be GIVEN or TAKE | SPEC | Specifies this device has been defined as either an input-only or output-only device | | | | |
| Status name | Definition | | | | | | | | | | | | | | | | |
| NORM | Specifies this device is available to be GIVEN or TAKEN | | | | | | | | | | | | | | | | |
| NGIV | Specifies this device cannot be GIVEN to any other partner within the TapeSHARE PLEX | | | | | | | | | | | | | | | | |
| NTAK | Specifies that this image will not TAKE this device for use | | | | | | | | | | | | | | | | |
| NGIV-NTAK | Specifies this device is not available to be GIVEN or TAKE | | | | | | | | | | | | | | | | |
| SPEC | Specifies this device has been defined as either an input-only or output-only device | | | | | | | | | | | | | | | | |
| Pref | Shows whether or not the device has been defined as an input-only device or an output-only device | | | | | | | | | | | | | | | | |
| Jobname | Shows the name of the job that allocated the device | | | | | | | | | | | | | | | | |
| Type | Shows the device type | | | | | | | | | | | | | | | | |
| Sys | Shows the SMF system name of the partner | | | | | | | | | | | | | | | | |
| Gi ves | Shows the number of times this device has been GIVEN | | | | | | | | | | | | | | | | |
| Takes | Shows the number of times this device has been TAKEN | | | | | | | | | | | | | | | | |

Issuing Commands on the TapeSHARE Workstation Panel

TapeSHARE includes a set of BBI control commands you can use to change the status of the devices. The following table describes these devices. For a complete list of BBI control commands, refer to “BBI Control Commands” in the *MAINVIEW Administration Guide*.

| Field Name | Description |
|-------------------------------|---|
| .DISPLAY D PARTNERS | Displays the status of the TapeSHARE partners in the TapeSHARE PLEX. |
| .GET G dddd,ACTION1(,ACTION2) | <p>Allows you to VARY the status of a device online where dddd is the 3- or 4-character device address. The parameters that can be used with this command are:</p> <p>ONLINE Locates the device on any TapeSHARE partner, VARYs it OFFLINE to that partner and ONLINE to the local partner.</p> <p>If TapeSHARE cannot locate a device on any of the partners, TapeSHARE will not VARY the device ONLINE.</p> <p>GIVE NOGIVE Changes the status of the device to GIVE or NOGIVE. You can use this parameter with the ONLINE parameter; for example, you can issue:</p> <p style="padding-left: 40px;">. GET dddd, ONLINE, NOGIVE</p> <p>This VARYs the device ONLINE and does not allow it to be GIVEN back the original partner.</p> <p>TAKE NOTAKE Changes the status of the device to TAKE or NOTAKE; for example: You can use this parameter with the ONLINE parameter; for example, you can issue:</p> <p style="padding-left: 40px;">. GET dddd, ONLINE, NOTAKE</p> <p>This VARYs the device ONLINE and does not allow it to be TAKEN by another partner.</p> |
| .LOCATE L U,dddd | Locates a device, where dddd is the 3- or 4-character device address (displays the status of a device) |
| .RESET E TS,VALIDATE | <p>Checks the path validity for all tape devices.</p> <p>For example, suppose a path is marked ACTIVE before this command is issued. If the path for a tape device becomes INACTIVE when this command is issued, the entry in the device table for that tape device will be updated and marked as INACTIVE.</p> |

Chapter 3. Customizing TapeSHARE (Optional)

This chapter describes how to customize TapeSHARE.

Important Note

Because TapeSHARE is designed to work without special customization steps, these procedures are **all optional**.

TapeSHARE **performs tape device sharing automation for you in its default mode**. You may want to read this chapter to learn what aspects of TapeSHARE can be customized and decide if you want to implement any of the customization.

All customization options are explained in this chapter.

| To read about... | See page... |
|--|-------------|
| How to define partners within a TapeSHARE PLEX | 33 |
| How to specify how much time TapeSHARE should wait for a GIVE or TAKE to complete | 37 |
| What actions TapeSHARE should take when a request for tape devices cannot be met | 38 |
| How to specify if TapeSHARE should retry attempting to satisfy allocation requests and how long to wait between retry attempts to complete | 40 |
| How to designate NOGIVE or NOTAKE tape devices | 42 and 44 |
| How to designate NOGIVE-NOTAKE tape devices | 46 |
| How to define tape devices as input-only or output-only | 50 |
| How to turn on Preferencing | 52 |
| How to specify a user-defined deallocation procedure | 54 |
| How to activate an AAOTSPxx member | 55 |

Remember—none of these steps have to be completed; they are optional.

How TapeSHARE Is Customized

BBPARM member AAOTSPxx, where xx is a 2-character user-defined suffix, contains parameters that control how TapeSHARE operates. Each TapeSHARE can have an AAOTSPxx member associated with it. A single TapeSHARE also might have several AAOTSPxx members that you can activate under different circumstances.

Within a TapeSHARE PLEX, each TapeSHARE can have its own AAOTSPxx member associated with it. For example, you might decide that within a TapeSHARE PLEX of SYSA, SYSB, and SYSC that SYSA can share devices with SYSB but not with SYSC. For this, you would have to define an AAOTSPxx member for each image to make these specifications.

Or you might decide when TapeSHARE cannot satisfy a request for resources for SYSA that the action TapeSHARE takes is to allow the job to wait without holding resources but if a request for SYSC cannot be met, the action is to issue a WTOR. By changing the parameters in the AAOTSPxx member for each TapeSHARE in the PLEX, you can customize the way TapeSHARE operates.

To complete any customization step described in this chapter, complete the installation steps described in the MAINVIEW AutoOPERATOR Customization Guide. The following sections describe each of the features and contain step-by-step procedures.

Using the Dynamic Parameter Manager Application

Use the MAINVIEW AutoOPERATOR Dynamic Parameter Manager application to access the AAOTSPxx member for each TapeSHARE. With the Dynamic Parameter Manager application, you easily can modify the AAOTSPxx parameters as well as create additional AAOTSPxx members. See “Accessing the Dynamic Parameter Manager” on page 33.

Defining TapeSHARE Partners

Once you decide which MVS images you want to have in a TapeSHARE PLEX, install TapeSHARE on each of the images. For example, you might decide that you want a TapeSHARE PLEX of SYSA, SYSB, and SYSC.

Install TapeSHARE into a BBI-SS PAS on each of these three systems (for installation information, see the MAINVIEW AutoOPERATOR Customization Guide). TapeSHARE checks to see if any partnerships are established. If you do not specify special partnerships between the systems, TapeSHARE assumes that any BBI node (defined in the BBINOD00 member) with TapeSHARE installed is a partner within the PLEX.

When defining partners in AAOTSPxx, you can create specific relationships between the partners and control how they interact with each other for tape device sharing. For example, you can specify that SYSA can share devices with only SYSB and not with SYSC. Or SYSA might share devices 0E01 through 0E05 with SYSB but any device on SYSA can be shared with SYSC. This is done with the PARTNER parameter of the AAOTSPxx member which you can modify with the Dynamic Parameter Manager application.

Accessing the Dynamic Parameter Manager

The following describes how to access the Dynamic Parameter Manager.

1. Select Option 9 from the MAINVIEW AutoOPERATOR Primary Option Menu (see Figure 8).

| | | |
|---|------------------------------|--------------------|
| BMC Software ----- PRIMARY OPTION MENU ----- | | AutoOPERATOR |
| OPTION ==> | | DATE -- 01/02/01 |
| | | TIME -- 12: 22: 53 |
| | | USERID -- BAOMXY2 |
| | | MODE -- ISPF 4. 8 |
| Operator Workstations: | | |
| 1 ALERT Management | 5 NetView Resources | |
| 2 MVS Resources | 6 TapeSHARE | |
| 3 CICS Resources | 7 MQSeries | |
| 4 IMS Resources | | |
| Automation: | | |
| 8 Basic and Advanced Automation | 9 Dynamic Parameter Manager | |
| General Services: | | |
| C Service Refresh Cycle Setup | K Current PF Key Assignments | |
| L Display Journal | T Tutorials | |
| M Display Messages and Codes | X Terminate | |
| PF1/13 HELP PF3/15: EXIT | | |
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Figure 8. MAINVIEW AutoOPERATOR Primary Option Menu

The Dynamic Parameter Manager panel is displayed (Figure 9).

| BMC Software ----- Dynamic Parameter Manager ----- AutoOPERATOR | | | | | | | | | |
|---|----------|-----|----|----|-------------------|----------------|------|---------|--|
| COMMAND ==> | | | | | TGT ==> DSHD | | | | |
| Primary command: Add | | | | | DATE --- 01/03/12 | | | | |
| LC CMDS --- (S)elect, (A)ctivate | | | | | TIME --- 16:13:03 | | | | |
| Cmd | Member | Lib | VV | MM | Created | Changed | Size | ID | |
| - | AA0ALS00 | 2 | 01 | 02 | 98/02/07 | 01/02/08 10:22 | 25 | CMRH | |
| - | AA0ARP00 | 1 | 01 | 02 | 99/06/08 | 01/03/09 15:44 | 30 | BAODYM4 | |
| - | AA0TSP00 | 1 | 01 | 01 | 99/06/09 | 01/03/12 16:12 | 5 | KMZ1 | |
| - | AA0TSP55 | 1 | 01 | 00 | 99/06/09 | 01/03/09 13:45 | 1 | MES2 | |

Figure 9. Dynamic Parameter Manager Panel

2. Select the AA0TSP00 member by entering an S ((S)elect) line command) next to the AA0TSP00 member name.

The TapeSHARE Parameters panel is displayed (Figure 10).

| | | | | | |
|---|--------|---------------------------------------|---------|----------------------------------|----------|
| BMC Software ----- | | TapeSHARE Parameters ----- | | AutoOPERATOR | |
| COMMAND ==> | | | | TGT --- | DSHD |
| | | | | DATE --- | 01/03/12 |
| | | | | TIME --- | 16:27:51 |
| | Member | Current | | | |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) | | | |
| TIMEOUT | ==> | 120 | 120 | Subsystem response timeout value | |
| RETRYCNT | ==> | 2 | 2 | Times to retry a take request | |
| RETRYINT | ==> | 30 | 30 | Interval between take retries | |
| ACTION | ==> | DEFAULT | DEFAULT | Allocation failure action | |
| NOGIVE | ==> | (Enter ? for a device list) | | | |
| NOTAKE | ==> | (Enter ? for a device list) | | | |
| PREF | ==> | NO | NO | Enable / Force preferencing | |
| PREFDEV | ==> | (Enter ? for a device list) | | | |
| FREE | ==> | DEALLOC | DEALLOC | Deallocation procedure name | |
| TRACE | ==> | NO | NO | Start / Stop TapeSHARE tracing | |
| Press END to save changes, CANCEL to cancel changes | | | | | |

Figure 10. TapeSHARE Parameters Panel

Note that the first time you access this panel the left and right sides of the panel are displayed with the default values.

Also note that for some of the parameters, you must enter a question mark (?) in the input field to display another panel where you can enter new values. These parameters are:

- NOGIVE
- NOTAKE
- PARTNER
- PREFDEV

Specifying a Partner Name

Modify the PARTNER parameter after you have planned out which images will be TapeSHARE partners and if any of the partners will have devices that cannot be GIVEN to a partner.

Remember—when TapeSHARE is initialized, it checks to see if this parameter specifies any partnerships. If TapeSHARE finds that you have not specified partnerships, TapeSHARE assumes that any BBI node (defined in the BBINOD00 member) with TapeSHARE installed is a partner within the PLEX. If TapeSHARE finds that you have specified partnerships with this parameter, it does not check the BBINOD00 member.

To specify a partner:

1. On the TapeSHARE Parameters panel, enter a question mark next to the PARTNER field. See Figure 11.

| | | | | |
|---|-------------|----------------------------|---------------------------------------|-------------------|
| BMC Software ----- | | TapeSHARE Parameters ----- | | AutoOPERATOR |
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16:27:51 |
| | Member | Current | | |
| PARTNER | ==> ? | | * LIST * (Enter ? for a partner list) | |
| TIMEOUT | ==> 120 | 120 | Subsystem response timeout value | |
| RETRYCNT | ==> 2 | 2 | Times to retry a take request | |
| RETRYINT | ==> 30 | 30 | Interval between take retries | |
| ACTION | ==> DEFAULT | DEFAULT | Allocation failure action | |
| NOGIVE | ==> | | (Enter ? for a device list) | |
| NOTAKE | ==> | | (Enter ? for a device list) | |
| PREF | ==> NO | NO | Enable / Force preferencing | |
| PREFDEV | ==> | | (Enter ? for a device list) | |
| FREE | ==> DEALLOC | DEALLOC | Deallocation procedure name | |
| TRACE | ==> NO | NO | Start / Stop TapeSHARE tracing | |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 11. TapeSHARE Parameters Panel: Adding a Partner Name

2. After entering a question mark, press ENTER.

Figure 12 is displayed.

| | | | | |
|----------------------------|--|---------------------------------|--|-------------------|
| BMC Software ----- | | Update TapeSHARE Partners ----- | | AutoOPERATOR |
| COMMAND ==> | | | | TGT --- DSHD |
| Primary command: Add | | | | DATE --- 01/03/14 |
| LC CMDS --- (D)elte | | | | |
| ***** END OF ENTRIES ***** | | | | |

Figure 12. List of Defined Partners

3. Use this panel to enter a list of partners. To specify a partner, use the primary command Add and the 1- to 4-character BBI subsystem name.

For example, to add a partner with a BBISS PAS name of SYSA:

```
BMC Software ----- Update TapeSHARE Partners ----- AutoOPERATOR
COMMAND ==> ADD SYSA                                     TGT --- DSHD
```

You also can enter (separated by a comma) the device address or a range of device address that cannot be given to that partner; for example:

```
BMC Software ----- Update TapeSHARE Partners ----- AutoOPERATOR
COMMAND ==> ADD SYSA, 0123                               TGT --- DSHD
```

In this example, the device number 0123 will not be eligible to be GIVEN to partner SYSA. To enter a range of addresses:

```
BMC Software ----- Update TapeSHARE Partners ----- AutoOPERATOR
COMMAND ==> ADD SYSA, 0123-0130                           TGT --- DSHD
```

In this example, the range of devices that fall between 0123 and 1300 will not be eligible to be GIVEN to partner SYSA.

To enter multiple ranges of devices:

```
BMC Software ----- Update TapeSHARE Partners ----- AutoOPERATOR
COMMAND ==> ADD SYSA, 0123-0130, 0E01-0E05                TGT --- DSHD
```

4. Press PF3 when you have finished entering all the partners.

This returns you to the TapeSHARE Parameters panel.

5. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter for.

Specifying How Long TapeSHARE Should Wait

You can decide to specify the amount of time that TapeSHARE should wait for a response from its partners in the PLEX. You can specify a value of 0 to 300 seconds that an image should wait for a response from its partners.

If the request for resources is not completed in the time specified, then the request times out and generates an Allocation Failed Event. You may want to specify time out values for an image where a lot of processing takes place and requests for devices happen often. By specifying a greater time out value, you can avoid having a lot of request failures.

The default time to wait is 120 seconds (2 minutes). This is controlled by the TIMEOUT parameter.

Modify the TIMEOUT parameter after you have determined what an appropriate wait time is for a particular image.

To specify a time out value:

1. On the TapeSHARE Parameters panel, enter the time out value (in seconds) next to the TIMEOUT field. See Figure 13.

| | | | | |
|---|--------|---------------------------------------|---------|----------------------------------|
| BMC Software ----- | | TapeSHARE Parameters ----- | | AutoOPERATOR |
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16:27:51 |
| | Member | Current | | |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ==> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ==> | 2 | 2 | Times to retry a take request |
| RETRYINT | ==> | 30 | 30 | Interval between take retries |
| ACTION | ==> | DEFAULT | DEFAULT | Allocation failure action |
| NOGIVE | ==> | (Enter ? for a device list) | | |
| NOTAKE | ==> | (Enter ? for a device list) | | |
| PREF | ==> | NO | NO | Enable / Force preferencing |
| PREFDEV | ==> | (Enter ? for a device list) | | |
| FREE | ==> | DEALLOC | DEALLOC | Deallocation procedure name |
| TRACE | ==> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 13. TapeSHARE Parameters Panel: Specifying a New Time Out Value

In this example, the new time out value is 3 minutes.

2. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter for.

Specifying How Many Retries TapeSHARE Should Attempt

Occasionally, TapeSHARE will not be able to satisfy a request for devices; refer to “When TapeSHARE Cannot Satisfy a Request” on page 5 for more information. You can specify that TapeSHARE attempts more than once to satisfy requests made by an image.

For example, suppose SYSA requests devices from its partners within the PLEX and the first attempt made by TapeSHARE to satisfy the request fails. You can specify up to 10 retry attempts to satisfy the request. If all the retry attempts fail, an Allocation Failed Event occurs. When specifying retry attempts, you also can specify the number of seconds between each retry.

The default number of retry attempts is 2 and the default wait time between attempts is 30 seconds. These are controlled by the RETRYCNT and RETRYINT parameters.

Modify the RETRYCNT and RETRYINT parameters after you have determined:

- How many retry attempts you want TapeSHARE to make after an initial allocation attempt fails
- How long TapeSHARE should wait between retry attempts

and after you have reviewed Appendix D, “Making TapeSHARE Work with MVS Allocation More Effectively” on page 389.

Important Note

Incorrectly modifying these parameters will negatively impact TapeSHARE’s effectiveness. You are strongly urged to review Appendix D, “Making TapeSHARE Work with MVS Allocation More Effectively” on page 389 before you make changes.

To specify the number of retries: On the TapeSHARE Parameters panel, enter the number of retries (up to 10) next to the RETRYCNT field. See Figure 14.

| | | | | |
|---|--------|---------------------------------------|---------|----------------------------------|
| BMC Software ----- | | TapeSHARE Parameters ----- | | AutoOPERATOR |
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16:27:51 |
| | Member | Current | | |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ==> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ==> | 5 | 2 | Times to retry a take request |
| RETRYINT | ==> | 30 | 30 | Interval between take retries |
| ACTION | ==> | CANCEL | DEFAULT | Allocation failure action |
| NOGIVE | ==> | (Enter ? for a device list) | | |
| NOTAKE | ==> | (Enter ? for a device list) | | |
| PREF | ==> | NO | NO | Enable / Force preferencing |
| PREFDEV | ==> | (Enter ? for a device list) | | |
| FREE | ==> | DEALLOC | DEALLOC | Deallocation procedure name |
| TRACE | ==> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 14. TapeSHARE Parameters Panel: Specifying a Retry Count Value

In this example, the retry attempt value is 5 attempts after an initial allocation attempt fails.

3. If you want to change the default number of seconds to wait between retry attempts from 30 seconds, enter the new default wait interval. See Figure 15.

| BMC Software | | TapeSHARE Parameters | | AutoOPERATOR |
|---|-----|----------------------|---------|---------------------------------------|
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16:27:51 |
| | | Member | Current | |
| PARTNER | ==> | | | * LIST * (Enter ? for a partner list) |
| TIMEOUT | ==> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ==> | 5 | 2 | Times to retry a take request |
| RETRYINT | ==> | 15 | 30 | Interval between take retries |
| ACTION | ==> | CANCEL | DEFAULT | Allocation failure action |
| NOGIVE | ==> | | | (Enter ? for a device list) |
| NOTAKE | ==> | | | (Enter ? for a device list) |
| PREF | ==> | NO | NO | Enable / Force preferencing |
| PREFDEV | ==> | | | (Enter ? for a device list) |
| FREE | ==> | DEALLOC | DEALLOC | Deallocation procedure name |
| TRACE | ==> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 15. TapeSHARE Parameters Panel: Specifying a Retry Interval Value

In this example, the wait time between try attempts is 15 seconds.

4. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter(s) for.

Defining Actions to Take When Requests for Devices Cannot Be Met

This section describes what actions TapeSHARE can take when a request for tape devices cannot be met (also called an Allocation Failed Event). The action taken by TapeSHARE for an Allocation Failed Event is controlled by the ACTION parameter in AAOTSPxx.

For each TapeSHARE, you can specify a different action to be taken. The possible actions are:

- Allow the installation's default policy determine what to do; the default
- Issue a WTOR to the operator

This is the default if your installation does not have its own a default action defined.

- Cancel the job that requested the tape devices
- Allow the job to wait without holding resources

Suppose a job (ABC) needs to find five tape devices to complete its task but TapeSHARE can locate only four devices. By specifying NOHOLD, you are allowing Job ABC to wait and the four available devices are not being held.

For more information, refer to Appendix D, "Making TapeSHARE Work with MVS Allocation More Effectively" on page 389.

- Allow the job to wait while holding resources

For the same situation, if you specify HOLD, Job ABC will hold onto the four devices that were found while it waits for TapeSHARE to find a fifth device.

For more information, refer to Appendix D, "Making TapeSHARE Work with MVS Allocation More Effectively" on page 389.

Modify the ACTION parameter after you have determined the most appropriate action to be taken when a job requests resources but cannot receive them immediately.

To specify an action:

1. On the TapeSHARE Parameters panel, enter the name of the action next to the ACTION field. See Figure 16.

| BMC Software | | TapeSHARE Parameters | | AutoOPERATOR |
|---|--------|---------------------------------------|---------|----------------------------------|
| COMMAND ===> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16:27:51 |
| | Member | Current | | |
| PARTNER | ===> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ===> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ===> | 5 | 2 | Times to retry a take request |
| RETRYINT | ===> | 15 | 30 | Interval between take retries |
| ACTION | ===> | CANCEL | DEFAULT | Allocation failure action |
| NOGIVE | ===> | (Enter ? for a device list) | | |
| NOTAKE | ===> | (Enter ? for a device list) | | |
| PREF | ===> | NO | NO | Enable / Force preferencing |
| PREFDEV | ===> | (Enter ? for a device list) | | |
| FREE | ===> | DEALLOC | DEALLOC | Deallocation procedure name |
| TRACE | ===> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 16. TapeSHARE Parameters Panel: Specifying an Action

This example shows an action of CANCEL; the job would be canceled if an Allocation Failed Event occurred.

Possible values for this field are:

- DEFAULT: Takes your installation's default action (default)
- WTOR: Issues a WTOR
- CANCEL: Cancels the job
- NOHOLD: Job waits without holding resources
- HOLD: Job waits while holding resources value

2. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter for.

Defining NOGIVE Devices

You may decide that some devices on a specific image should not be allowed to be GIVEN by TapeSHARE to other partners within the PLEX.

For example, you may have an image where a lot of batch processing takes place and tape devices are used often. The devices on this image can be designated as NOGIVE devices and TapeSHARE will never attempt to share those devices with other partners.

Note: A NOGIVE device can still be GIVEN manually to another image by an operator.

Defining NOGIVE devices is controlled by the NOGIVE parameter. Modify the NOGIVE parameter after you have determined which devices on an image should be dedicated to the image.

To specify a NOGIVE device:

1. On the TapeSHARE Parameters panel, enter a question mark next to the NOGIVE field. See Figure 17.

| | | | | |
|---|--------|---------------------------------------|---------|----------------------------------|
| BMC Software ----- | | TapeSHARE Parameters ----- | | AutoOPERATOR |
| COMMAND ===> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16: 27: 51 |
| | Member | Current | | |
| PARTNER | ===> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ===> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ===> | 5 | 2 | Times to retry a take request |
| RETRYINT | ===> | 15 | 30 | Interval between take retries |
| ACTION | ===> | CANCEL | DEFAULT | Allocation failure action |
| NOGIVE | ===> | ? | | (Enter ? for a device list) |
| NOTAKE | ===> | | | (Enter ? for a device list) |
| PREF | ===> | NO | NO | Enable / Force preferencing |
| PREFDEV | ===> | | | (Enter ? for a device list) |
| FREE | ===> | DEALLOC | DEALLOC | Deallocation procedure name |
| TRACE | ===> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 17. TapeSHARE Parameters Panel: Specifying NOGIVE Devices

2. After entering a question mark, press ENTER.

Figure 18 is displayed.

| | | | | |
|----------------------------|--|---------------------------------------|--|---------------------|
| BMC Software ----- | | Update Drives Dedicated to DSHD ----- | | AutoOPERATOR |
| COMMAND ===> | | | | TGT --- DSHD |
| Primary command: Add | | | | DATE --- 01/03/14 |
| LC CMDS --- (D)elte | | | | TIME --- 17: 38: 34 |
| ***** END OF ENTRIES ***** | | | | |

Figure 18. List of NOGIVE Devices

3. Use this panel to enter a list of all devices that you want dedicated to this image. To do this, use the primary command Add followed by the device address or range of addresses.

For example, to add a device address that is dedicated to this image (a NOGIVE device):

```
BMC Software ----- Update Drives Dedicated to DSHD ----- AutoOPERATOR
COMMAND ==> ADD 0144                                     TGT --- DSHD
```

To enter a range of NOGIVE devices:

```
BMC Software ----- Update Drives Dedicated to DSHD ----- AutoOPERATOR
COMMAND ==> ADD 0144-014E                                   TGT --- DSHD
```

4. Press PF3 when you have finished entering all the NOGIVE device addresses.

This returns you to the TapeSHARE Parameters panel.

5. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter for.

Defining NOTAKE Devices

Just as you may decide that some devices on a specific image should not be accessible to TapeSHARE to GIVE to other partners within the PLEX, you also may decide that some devices should be not be TAKEN by an image.

For example, you may decide that an image (SYSA) should not be able to use the devices with addresses from 0123 to 012F. This means that when SYSA requests devices, it will TAKE any device but will not TAKE devices with these addresses. These devices are designated as NOTAKE devices.

Note: A NOTAKE devices can still be VARIED manually online to another image by an operator.

Defining NOTAKE devices is controlled by the NOTAKE parameter. Modify the NOTAKE parameter after you have determined which devices an image should not accept when a request for resources is made.

To specify a NOTAKE device:

1. On the TapeSHARE Parameters panel, enter a question mark next to the NOTAKE field.
See Figure 19.

| BMC Software | | TapeSHARE Parameters | | AutoOPERATOR |
|---|-------------|---------------------------------------|----------------------------------|-------------------|
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16:27:51 |
| | Member | Current | | |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ==> 180 | 120 | Subsystem response timeout value | |
| RETRYCNT | ==> 5 | 2 | Times to retry a take request | |
| RETRYINT | ==> 15 | 30 | Interval between take retries | |
| ACTION | ==> CANCEL | DEFAULT | Allocation failure action | |
| NOGIVE | ==> | (Enter ? for a device list) | | |
| NOTAKE | ==> ? | (Enter ? for a device list) | | |
| PREF | ==> NO | NO | Enable / Force preferencing | |
| PREFDEV | ==> | (Enter ? for a device list) | | |
| FREE | ==> DEALLOC | DEALLOC | Deallocation procedure name | |
| TRACE | ==> NO | NO | Start / Stop TapeSHARE tracing | |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 19. TapeSHARE Parameters Panel: Specifying NOTAKE Devices

2. After entering a question mark, press ENTER.

Figure 20 is displayed.

```
BMC Software ----- Update Drives Excluded from DSHD ----- AutoOPERATOR
COMMAND ==>
Primary command: Add
LC CMDS --- (D)el ete
TGT --- DSHD
DATE --- 01/03/14
TIME --- 17:38:34

***** END OF ENTRIES *****
```

Figure 20. List of NOTAKE Devices

3. Use this panel to enter a list of all devices that you want designated as NOTAKE devices and that this image should not accept when a request for resources is made.

To do this, use the primary command Add followed by the device address or range of addresses.

For example, to add a NOTAKE device address:

```
BMC Software ----- Update Drives Excluded from DSHD ----- AutoOPERATOR
COMMAND ==> ADD 0133
TGT --- DSHD
```

To enter a range of NOTAKE devices:

```
BMC Software ----- Update Drives Excluded from DSHD ----- AutoOPERATOR
COMMAND ==> ADD 0133-013F
DSHD
TGT ---
```

4. Press PF3 when you have finished entering all the NOTAKE device addresses.

This returns you to the TapeSHARE Parameters panel.

5. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter for.

Defining NOGIVE-NOTAKE Devices

Define NOGIVE-NOTAKE devices when you have devices within the PLEX that should be excluded completely from TapeSHARE control. For example, you may apply maintenance regularly to some devices on an image and you want to exclude those devices from being allocated to other images.

By designating these devices as NOGIVE-NOTAKE devices, they will be excluded completely from TapeSHARE control. Defining NOGIVE-NOTAKE devices is controlled by modifying both the NOGIVE and the NOTAKE parameter together.

Modify the NOGIVE and the NOTAKE parameters after you have determined which devices on an image should be excluded completely from TapeSHARE control.

To specify a NOGIVE-NOTAKE device:

1. Determine the device addresses of the devices that you want excluded completely from TapeSHARE control.
2. On the TapeSHARE Parameters panel, enter a question mark next to the NOGIVE field. See Figure 21.

| | | | | |
|---|--------|---------------------------------------|---------|----------------------------------|
| BMC Software ----- | | TapeSHARE Parameters ----- | | AutoOPERATOR |
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16: 27: 51 |
| | Member | Current | | |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ==> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ==> | 5 | 2 | Times to retry a take request |
| RETRYINT | ==> | 15 | 30 | Interval between take retries |
| ACTION | ==> | CANCEL | DEFAULT | Allocation failure action |
| NOGIVE | ==> | ? | | (Enter ? for a device list) |
| NOTAKE | ==> | | | (Enter ? for a device list) |
| PREF | ==> | NO | NO | Enable / Force preferencing |
| PREFDEV | ==> | | | (Enter ? for a device list) |
| FREE | ==> | DEALLOC | DEALLOC | Deallocation procedure name |
| TRACE | ==> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 21. TapeSHARE Parameters Panel: Specifying NOGIVE-NOTAKE Devices (Example 1)

3. After entering a question mark, press ENTER.

Figure 22 is displayed.

```
BMC Software ----- Update Drives Dedicated to DSHD ----- AutoOPERATOR
COMMAND ==>
Primary command: Add                                TGT --- DSHD
                                                    DATE --- 01/03/14
                                                    TIME --- 17:38:34

LC CMDS --- (D)el ete

***** END OF ENTRIES *****
```

Figure 22. List of NOGIVE Devices (for NOGIVE-NOTAKE)

4. Use this panel to enter a list of all devices that you want excluded from TapeSHARE control on this image.

Remember, these same devices must be added to the NOTAKE panel to have them excluded from TapeSHARE control.

To do this, use the primary command **Add** followed by the device address or range of addresses. For example, to add a device address:

```
BMC Software ----- Update Drives Dedicated to DSHD ----- AutoOPERATOR
COMMAND ==> ADD 0133                                TGT --- DSHD
```

To enter a range of devices:

```
BMC Software ----- Update Drives Dedicated to DSHD ----- AutoOPERATOR
COMMAND ==> ADD 0133-013F                            TGT --- DSHD
```

5. Press PF3 when you have finished entering all the device addresses.

This returns you to the TapeSHARE Parameters panel.

6. On the TapeSHARE Parameters panel, enter a question mark next to the NOTAKE field.
See Figure 23.

| | | |
|---|-------------|---------------------------------------|
| BMC Software ----- TapeSHARE Parameters ----- | | AutoOPERATOR |
| COMMAND ==> | | TGT --- DSHD |
| | | DATE --- 01/03/12 |
| | | TIME --- 16:27:51 |
| | Member | Current |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) |
| TIMEOUT | ==> 180 | 120 Subsystem response timeout value |
| RETRYCNT | ==> 5 | 2 Times to retry a take request |
| RETRYINT | ==> 15 | 30 Interval between take retries |
| ACTION | ==> CANCEL | DEFAULT Allocation failure action |
| NOGIVE | ==> | (Enter ? for a device list) |
| NOTAKE | ==> ? | (Enter ? for a device list) |
| PREF | ==> NO | NO Enable / Force preferencing |
| PREFDEV | ==> | (Enter ? for a device list) |
| FREE | ==> DEALLOC | DEALLOC Deallocation procedure name |
| TRACE | ==> NO | NO Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | |

Figure 23. TapeSHARE Parameters Panel: Specifying NOGIVE-NOTAKE Devices (Example 2)

7. After entering a question mark, press ENTER.

Figure 24 is displayed.

| | | |
|---|--|--------------|
| BMC Software ----- Update Drives Excluded from DSHD ----- | | AutoOPERATOR |
| COMMAND ==> | | TGT --- DSHD |

Figure 24. List of NOTAKE Devices (for NOGIVE-NOTAKE)

8. Use this panel to enter a list of all devices that you want excluded from TapeSHARE control on this image.

Remember, these same devices were added to the NOGIVE panel to have them excluded from TapeSHARE control.

To do this, use the primary command Add followed by the device address or range of addresses. For example, to add a device address:

| | | |
|---|--|--------------|
| BMC Software ----- Update Drives Excluded from DSHD ----- | | AutoOPERATOR |
| COMMAND ==> ADD 0133 | | TGT --- DSHD |

To enter a range of devices:

| | | |
|---|--|--------------|
| BMC Software ----- Update Drives Excluded from DSHD ----- | | AutoOPERATOR |
| COMMAND ==> ADD 0133-013F | | TGT --- DSHD |

9. Press PF3 when you have finished entering all the device addresses.

10. You have now finished excluding devices from the BBI-SS PAS named DSHD.

To finish excluding devices from all the partners in the PLEX, you must repeat these steps for each partner.

When this is done, the devices are excluded completely from TapeSHARE control.

Defining Tape Devices as Input-Only or Output-Only

This section describes how you can specify that devices on each partner can be defined input-only or output-only. This is controlled by the PREFDEV parameter. When these specifications are used in conjunction with the PREF parameter, TapeSHARE uses one of two modes to determine whether or not to GIVE devices that have been defined as input-only or output-only under different circumstances.

For example, suppose half the devices on SYSA are defined as output-only devices and the other half as input-only. If a partner (SYSB) within the PLEX requires an output-only device to complete an output operation, TapeSHARE looks for an available device among all devices that have been defined as output-only devices on SYSA.

TapeSHARE has another feature called Preferencing that you activate if you specify input-only or output-only devices. (Refer to “What Preferencing Is” on page 7 for a discussion about Preferencing.)

Modify the PREFDEV parameter after you have determined which devices on each image should be allocated as input-only or output-only.

To specify a device as input-only:

1. On the TapeSHARE Parameters panel, enter a question mark next to the PREFDEV field. See Figure 25.

| | | | | |
|---|--------|---------------------------------------|---------|----------------------------------|
| BMC Software ----- | | TapeSHARE Parameters ----- | | AutoOPERATOR |
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16: 27: 51 |
| | Member | Current | | |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ==> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ==> | 5 | 2 | Times to retry a take request |
| RETRYINT | ==> | 15 | 30 | Interval between take retries |
| ACTION | ==> | CANCEL | DEFAULT | Allocation failure action |
| NOGIVE | ==> | (Enter ? for a device list) | | |
| NOTAKE | ==> | (Enter ? for a device list) | | |
| PREF | ==> | NO | NO | Enable / Force preferencing |
| PREFDEV | ==> | ? | | (Enter ? for a device list) |
| FREE | ==> | DEALLOC | DEALLOC | Deallocation procedure name |
| TRACE | ==> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 25. TapeSHARE Parameters Panel: Specifying an Input-Only Device

2. After entering a question mark, press ENTER.

Figure 26 is displayed.

```
BMC Software ----- Update Drive Preference for DSHD ----- AutoOPERATOR
COMMAND ==>
Primary command:  Add                                TGT  --- DSHD
                                                    DATE  --- 01/03/14
                                                    TIME  --- 17: 40: 22

LC CMDS --- (D)el ete

***** END OF ENTRIES *****
```

Figure 26. List of Device Preferences

3. Use this panel to enter a list of device addresses that are input-only or output-only. To do this:
 - a. Use the primary command Add followed by the device address
 - b. Separated by a comma, include an I (to indicate the device is input-only) or an O (to indicate it is output-only)

For example, to add a device address that is input-only:

```
BMC Software ----- Update Drive Preference for DSHD ----- AutoOPERATOR
COMMAND ==> ADD 0131, I                                TGT  --- DSHD
```

To add an output-only device:

```
BMC Software ----- Update Drive Preference for DSHD ----- AutoOPERATOR
COMMAND ==> ADD 0133, O                                TGT  --- DSHD
```

4. Press PF3 when you have finished entering all the devices.

This returns you to the TapeSHARE Parameters panel.

5. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter for.

Turning on Preferencing

Once you have decided to designate input-only or output-only devices (as in “Defining Tape Devices as Input-Only or Output-Only” on page 50), you can turn on a feature called Preferencing. “What Preferencing Is” on page 7 provides a description of what Preferencing is and how TapeSHARE allocates resources when you decide to use Preferencing.

There are two modes of Preferencing: Guideline and Force. Preferencing is controlled by the PREF parameter:

- To use Guideline mode, specify YES
- To use Force mode, specify FORCE

Modify the PREF parameter after you have specified which devices are output-only or input-only devices and after you have decided which mode of Preferencing you want to have in effect for each TapeSHARE partner.

To specify Preferencing in Guideline mode:

1. On the TapeSHARE Parameters panel, enter YES next to the PREF field. See Figure 27.

| | | | | |
|---|--------|---------------------------------------|---------|----------------------------------|
| BMC Software ----- | | TapeSHARE Parameters ----- | | AutoOPERATOR |
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16:27:51 |
| | Member | Current | | |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ==> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ==> | 5 | 2 | Times to retry a take request |
| RETRYINT | ==> | 15 | 30 | Interval between take retries |
| ACTION | ==> | CANCEL | DEFAULT | Allocation failure action |
| NOGIVE | ==> | (Enter ? for a device list) | | |
| NOTAKE | ==> | (Enter ? for a device list) | | |
| PREF | ==> | YES | NO | Enable / Force preferencing |
| PREFDEV | ==> | (Enter ? for a device list) | | |
| FREE | ==> | DEALLOC | DEALLOC | Deallocation procedure name |
| TRACE | ==> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 27. TapeSHARE Parameters Panel: Specifying Preferencing Guideline Mode

To specify Preferencing in Force mode, enter FORCE next to the PREF field. See Figure 28

| | | | |
|--|--------|---------------------|---------------------------------------|
| BMC Software --BMC Software ----- TapeSHARE Parameters ----- | | | |
| - AutoOPERATOR | | | |
| COMMAND ==> | | TGT --- DSHD | |
| | | DATE --- 01/03/12 | |
| | | TIME --- 16: 27: 51 | |
| | Member | Current | |
| PARTNER | ==> | | * LIST * (Enter ? for a partner list) |
| TIMEOUT | ==> | 180 | 120 Subsystem response timeout value |
| RETRYCNT | ==> | 5 | 2 Times to retry a take request |
| RETRYINT | ==> | 15 | 30 Interval between take retries |
| ACTION | ==> | CANCEL | DEFAULT Allocation failure action |
| NOGIVE | ==> | | (Enter ? for a device list) |
| NOTAKE | ==> | | (Enter ? for a device list) |
| PREF | ==> | FORCE | NO Enable / Force preferencing |
| PREFDEV | ==> | | (Enter ? for a device list) |
| FREE | ==> | DEALLOC | DEALLOC Deallocation procedure name |
| TRACE | ==> | NO | NO Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | |

Figure 28. TapeSHARE Parameters Panel: Specifying Preferencing Force Mode

2. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter for.

Specifying a User-Defined Deallocation Procedure (SP4.x Only)

Note: This procedure can be done only if you are running SP4.x.

You can specify a deallocation procedure which starts after TapeSHARE issues the VARY OFFLINE command to GIVE a device to another image.

Scheduling this procedure triggers deallocation processing in the system GIVING the device and places the device in an OFFLINE state. For example, you might want to use this to have some automation procedure take place after a device has been VARIED offline.

This parameter is used only if TapeSHARE is operating in an SP4 environment. The deallocation procedure name is a 1- to 8-character name. The default is DEALLOC.

Modify the FREE parameter after you have determined a deallocation procedure that you want to use.

To specify a deallocation procedure:

1. On the TapeSHARE Parameters panel, enter the 1- to 8-character name of the deallocation procedure in the FREE field. See Figure 29.

| BMC Software | | TapeSHARE Parameters | | AutoOPERATOR |
|---|--------|---------------------------------------|---------|----------------------------------|
| COMMAND ==> | | | | TGT --- DSHD |
| | | | | DATE --- 01/03/12 |
| | | | | TIME --- 16:27:51 |
| | Member | Current | | |
| PARTNER | ==> | * LIST * (Enter ? for a partner list) | | |
| TIMEOUT | ==> | 180 | 120 | Subsystem response timeout value |
| RETRYCNT | ==> | 5 | 2 | Times to retry a take request |
| RETRYINT | ==> | 15 | 30 | Interval between take retries |
| ACTION | ==> | CANCEL | DEFAULT | Allocation failure action |
| NOGIVE | ==> | (Enter ? for a device list) | | |
| NOTAKE | ==> | (Enter ? for a device list) | | |
| PREF | ==> | FORCE | NO | Enable / Force preferencing |
| PREFDEV | ==> | (Enter ? for a device list) | | |
| FREE | ==> | RELEASE | DEALLOC | Deallocation procedure name |
| TRACE | ==> | NO | NO | Start / Stop TapeSHARE tracing |
| Press END to save changes, CANCEL to cancel changes | | | | |

Figure 29. TapeSHARE Parameters Panel: Specifying a Deallocation Procedure

In this example, the deallocation procedure is named RELEASE.

2. Repeat this process for every TapeSHARE within the PLEX that you want to customize this parameter for.

Activating the AAOTSPxx Member

After a change is made to any parameter in an AAOTSPxx member (or after you have created a new AAOTSPxx member), you must complete this step to activate the change.

To activate the AAOTSPxx member:

1. Display the Dynamic Parameter Manager panel:

| | | | | | | | |
|---|----------|-----|-------|----------|----------------|-------------------|---------|
| BMC Software ----- Dynamic Parameter Manager ----- AutoOPERATOR | | | | | | | |
| COMMAND ==> | | | | | | TGT ==> DSHD | |
| Primary command: Add | | | | | | DATE --- 01/03/12 | |
| | | | | | | TIME --- 16:13:03 | |
| LC CMDS --- (S)elect, (A)ctivate | | | | | | | |
| Cmd | Member | Lib | VV.MM | Created | Changed | Size | ID |
| — | AAOALS00 | 2 | 01.02 | 98/02/07 | 01/02/08 10:22 | 25 | CMRH |
| — | AAOARP00 | 1 | 01.02 | 99/06/08 | 01/03/09 15:44 | 30 | BAODYM4 |
| — | AAOTSP00 | 1 | 01.01 | 99/06/09 | 01/03/12 16:12 | 5 | KMZ1 |
| — | AAOTSP55 | 1 | 01.00 | 99/06/09 | 01/03/09 13:45 | 1 | MES2 |

2. Activate the AAOTSP00 member by entering an A (for the (A)ctivate line command) next to it in the Cmd column..

| | | | | | | | | | |
|---|----------|-----|-------|----------|----------------|------|-------------------|--|--|
| BMC Software ----- Dynamic Parameter Manager ----- AutoOPERATOR | | | | | | | | | |
| COMMAND ==> | | | | | | | TGT ==> DSHD | | |
| Primary command: Add | | | | | | | DATE --- 01/03/12 | | |
| | | | | | | | TIME --- 16:13:03 | | |
| LC CMDS --- (S)elect, (A)ctivate | | | | | | | | | |
| Cmd | Member | Lib | VV.MM | Created | Changed | Size | ID | | |
| — | AAOALS00 | 2 | 01.02 | 98/02/07 | 01/02/08 10:22 | 25 | CMRH | | |
| — | AAOARP00 | 1 | 01.02 | 99/06/08 | 01/03/09 15:44 | 30 | BAODYM4 | | |
| A | AAOTSP00 | 1 | 01.01 | 99/06/09 | 01/03/12 16:12 | 5 | KMZ1 | | |
| — | AAOTSP55 | 1 | 01.00 | 99/06/09 | 01/03/09 13:45 | 1 | MES2 | | |

The Confirm Parameter Activation panel is displayed.

See below.

| | |
|--|---|
| BMC Software ----- Confirm Parameter Activation ----- AutoOPERATOR | |
| COMMAND ==> | TGT --- DSHD |
| | DATE --- 01/03/12 |
| | TIME --- 16:28:50 |
| Current TARGET: | DSHD |
| Current SSID: | DSHD |
| Last Parm: | N/A (Values may have been temporarily modified) |
| Replaced by: | AAOTSP00 |
| Last update: | |
| User: | RPR2 |
| Instructions: | |
| Press ENTER to confirm activation request. | |
| (The parameters in the current SS will be dynamically updated) | |
| Press END to cancel activation request. | |

The first time you activate a member, the Last Parm field value is N/A and the Last Update field is blank. In the future, when you activate a member, the Last Parm field shows the date of the currently active AAOTSPxx member and the Last Update field shows the date you activated the current member.

3. Do one of the following:

- To activate the member, press ENTER.
- To cancel activating this member, press PF3.

AAOTSPxx Parameters

The following documents the parameters in BBPARM member AAOTSPxx. Each MVS image can have only one TapeSHARE installed in a BBI-SS PAS but the BBI-SS PAS may have multiple AAOTSPxx members associated with it.

Important Note

TapeSHARE does not require that you perform any customization in the AAOTSPxx member or change any value. The parameters all have default values that allow TapeSHARE to perform tape device sharing in its out-of-the-box state.

Table 3. AAOTSPxx Parameter Definitions

| Parameter Name | Possible Values | Definition. | | | | | | | | | | |
|----------------|---|--|--------|-----------------|------|-------------------------------|--------|--|------|--|---------|---|
| ACTION= | <p>CANCEL WTOR NOHOLD HOLD DEFAULT</p> <p>Default value is DEFAULT.</p> | <p>The action TapeSHARE should take when an Allocation Failed Event occurs because a successful GIVE cannot be performed.</p> <p>Possible values and their definitions are:</p> <table><tr><td>CANCEL</td><td>Cancels the job</td></tr><tr><td>WTOR</td><td>Issues a WTOR to the operator</td></tr><tr><td>NOHOLD</td><td>Allows the job to wait without holding resources</td></tr><tr><td>HOLD</td><td>Allows the job to wait while holding resources</td></tr><tr><td>DEFAULT</td><td>Allows the installation's default action to occur</td></tr></table> <p>Example:</p> <p>ACTI ON=WTOR</p> <p>For more information, refer to “Making TapeSHARE Work with MVS Allocation More Effectively” on page 389.</p> | CANCEL | Cancels the job | WTOR | Issues a WTOR to the operator | NOHOLD | Allows the job to wait without holding resources | HOLD | Allows the job to wait while holding resources | DEFAULT | Allows the installation's default action to occur |
| CANCEL | Cancels the job | | | | | | | | | | | |
| WTOR | Issues a WTOR to the operator | | | | | | | | | | | |
| NOHOLD | Allows the job to wait without holding resources | | | | | | | | | | | |
| HOLD | Allows the job to wait while holding resources | | | | | | | | | | | |
| DEFAULT | Allows the installation's default action to occur | | | | | | | | | | | |
| FREE= | <p>The 1- to 8-character name of a deallocation procedure</p> <p>Default name is DEALLOC.</p> | <p>For use with MVS SP4.x only.</p> <p>Allows you to specify the 1- to 8-character name of a deallocation procedure which starts after TapeSHARE issues the VARY OFFLINE command to GIVE a device to another image. Scheduling the procedure triggers (de)allocation processing in the system GIVEN the device and places the device in an OFFLINE state.</p> <p>Example:</p> <p>FREE=RELEASE</p> | | | | | | | | | | |

Table 3. AAOTSPxx Parameter Definitions (Continued)

| Parameter Name | Possible Values | Definition. |
|----------------|---|---|
| NOGIVE= | <p>A tape device address (or a range of device addresses)</p> <p>Default value is none.</p> | <p>A list of device addresses (or a range of addresses) that should not be GIVEN to other partners within the TapeSHARE PLEX when they request devices to TAKE.</p> <p>Note: This does not prevent you from manually GIVING a NOGIVE device.</p> <p>If a device address is not associated with this parameter, TapeSHARE assumes there are no devices dedicated to this image.</p> <p>Example:</p> <p>NOGIVE=0123</p> <p>or</p> <p>NOGIVE=0120- 012F</p> <p>You also can use this parameter in conjunction with the NOTAKE parameter. By specifying a device address on both these parameters, the device will be a NOGIVE-NOTAKE device and it will be excluded completely from TapeSHARE control.</p> <p>For example:</p> <p>NOGIVE=0123 NOTAKE=0123</p> <p>If the device address 0123 is specified on both the NOGIVE and NOTAKE parameters, the 0123 is completely excluded from TapeSHARE control. TapeSHARE will not attempt to GIVE or TAKE this device.</p> |

Table 3. AAOTSPxx Parameter Definitions (Continued)

| Parameter Name | Possible Values | Definition. |
|----------------|--|---|
| NOTAKE= | <p>A tape device address (or a range of tape device addresses)</p> <p>Default value is none.</p> | <p>A list of device addresses (or a range of addresses) that this image should not TAKE when a request for resources is made.</p> <p>TapeSHARE on this image will not accept (TAKE) the devices specified. If a value is not associated with this parameter, TapeSHARE assumes that it can accept any tape devices when a request for resources is made.</p> <p>Example:</p> <p>NOTAKE=0123</p> <p>or</p> <p>NOTAKE=0120- 012F</p> <p>You also can use this parameter in conjunction with the NOGIVE parameter. By specifying a device address on both these parameters, the device will be a NOGIVE-NOTAKE device and it will be excluded completely from TapeSHARE control.</p> <p>For example:</p> <p>NOGIVE=0123 NOTAKE=0123</p> <p>If the device address 0123 is specified on both the NOGIVE and NOTAKE parameters, the 0123 device is completely excluded from TapeSHARE control. TapeSHARE will not attempt to GIVE or TAKE this device.</p> |

Table 3. AAOTSPxx Parameter Definitions (Continued)

| Parameter Name | Possible Values | Definition. |
|----------------|--|--|
| PARTNER= | <p>A BBI-SS PAS name that can be associated with either one or a range of tape devices</p> <p>Default value is none.</p> | <p>A list of BBI-SS PAS names that are TapeSHARE PLEX partners.</p> <p>You also can include with the BBI-SS PAS name the device address (or a range of device addresses) that TapeSHARE cannot GIVE to the named partner. See examples below.</p> <p>If no values are associated with this parameter, TapeSHARE assumes that any BBI node defined in BBINOD00 member is a partner within a TapeSHARE PLEX.</p> <p>Example 1:</p> <p>PARTNER=SYSA</p> <p>In this example, SYSA is a partner to this image.</p> <p>Example 2:</p> <p>PARTNER=SYSC, 0123</p> <p>In this example, SYSC is a partner to this image and the device whose address is 0123 cannot be GIVEN to partner SYSC.</p> <p>Example 3:</p> <p>PARTNER=SYSB, 0120- 0127</p> <p>In this example, SYSB is a partner to this image and the devices whose addresses fall between 0120 and 0127 cannot be GIVEN to partner SYSB.</p> |

Table 3. AAOTSPxx Parameter Definitions (Continued)

| Parameter Name | Possible Values | Definition. |
|----------------|--|--|
| PREF= | YES NO FORCE Default value is NO. | <p>Allows you to specify whether or not Preferencing is activated.</p> <p>If activated, TapeSHARE uses the devices identified on the PREFDEV parameter for only the operation (input or output) identified for that device.</p> <p>This parameter must be used in conjunction with the PREFDEV parameter.</p> <p>For example, in Guideline mode, if SYSA needs an output-only device but only input-only devices are available, the input-only device will be GIVEN to SYSA.</p> <p>If Force mode were in place, the input-only device would not be GIVEN to SYSA and an Allocation Failure Event would occur.</p> <p>Example:</p> <p>PREF=YES</p> <p>or</p> <p>PREF=NO</p> <p>or</p> <p>PREF=FORCE</p> |
| PREFDEV= | <p>A tape device address (or a range of tape device addresses) followed by either an I for input-only or O for output-only; see examples</p> <p>Default value is none.</p> | <p>A list of device addresses identified to TapeSHARE on this image that are allocated to perform input-only or output-only functions.</p> <p>This parameter should be used in conjunction with the PREF parameter.</p> <p>With the PREF activated, when a device is needed for an output-only operation, TapeSHARE attempts to choose from those devices identified by this parameter as output-only.</p> <p>If a value is not associated with this parameter, TapeSHARE will not invoke device preferencing.</p> <p>Example:</p> <p>PREFDEV=01A0-01A3, I</p> <p>or</p> <p>PREFDEV=0130, O</p> <p>or</p> <p>PREFDEV=0150-015F, O</p> |

Table 3. AAOTSPxx Parameter Definitions (Continued)

| Parameter Name | Possible Values | Definition. |
|----------------|---------------------------------|---|
| RETRYCNT= | 0-10 Default value is 2. | <p>The number of times TapeSHARE attempts to satisfy a request for devices after an initial attempt has failed.</p> <p>For example, suppose this system's request for devices is not satisfied and 3 retries is specified. TapeSHARE will attempt 3 more times to satisfy this request for devices.</p> <p>Example:</p> <p>RETRYCNT=3</p> <p>This parameter is used in conjunction with the RETRYINT parameter which specifies how long TapeSHARE waits between retry attempts.</p> <p>For more information, refer to Appendix D, "Making TapeSHARE Work with MVS Allocation More Effectively" on page 389.</p> <p>This chapter describes how to customize TapeSHARE.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;">Important Note</p> <p>Incorrectly modifying these parameters will negatively impact TapeSHARE's effectiveness. You are strongly urged to review Appendix D, "Making TapeSHARE Work with MVS Allocation More Effectively" on page 389 before you make changes.</p> </div> |

Table 3. AAOTSPxx Parameter Definitions (Continued)

| Parameter Name | Possible Values | Definition. |
|----------------|--------------------------------------|--|
| RETRYINT= | 0-300 Default value is 30. | <p>The number of seconds TapeSHARE waits for devices between attempts after an initial attempt has failed.</p> <p>For example, suppose:</p> <ul style="list-style-type: none"> • The RETRYCNT= parameter is set to 3 retries • The RETRYINT= parameter is set to 45 seconds • This system's request for devices is not satisfied <p>TapeSHARE waits 45 seconds after the initial attempt fails and retries to satisfy the request (retry attempt 1). If this attempt fails, TapeSHARE waits another 45 seconds and retries (attempt 2). If this attempt also fails, TapeSHARE waits another 45 seconds and retries (attempt 3).</p> <p>Should all three attempts fail, an Allocation Failed Event occurs and the specified action is taken.</p> <p>Example:</p> <p>RETRYCNT=3</p> <p>For more information, refer to Appendix D, "Making TapeSHARE Work with MVS Allocation More Effectively" on page 389.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;">Important Note</p> <p>Incorrectly modifying these parameters will negatively impact TapeSHARE's effectiveness. You are strongly urged to review Appendix D, "Making TapeSHARE Work with MVS Allocation More Effectively" on page 389 before you make changes.</p> </div> |
| TIMEOUT= | 0 - 999 Default value is 120. | <p>The amount of time (in seconds) to wait for the partners to respond to a request for devices. When this time is reached and a successful GIVE has not completed, an Allocation Failed Event occurs unless you have specified a number of retries on the RETRYCNT parameter. See below.</p> <p>Example:</p> <p>TIMEOUT=20</p> |
| TRACE= | YES NO Default value is NO. | <p>Writes diagnostic information to BBITST DD Statement.</p> <p>Example:</p> <p>TRACE=NO</p> |

Part 2. Using the MAINVIEW AutoOPERATOR for OS/390 Option

This part contains chapters that describe the applications available with the MAINVIEW AutoOPERATOR for OS/390 option (previously called MAINVIEW AutoOPERATOR for MVS). This part also contains information for the SYSPROG services that are available with this option.

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Chapter 4. Introduction to MAINVIEW AutoOPERATOR for OS/390

MAINVIEW AutoOPERATOR for OS/390 (also referred to as AutoOPERATOR for OS/390) provides:

- Events to the Rule Processor for automation
- MVS operations control through interactive applications that consolidate operations activities of up to eight MVS systems
- MVS and VTAM resource control through online menus and applications with simple line commands
- An interactive interface to and a subset of SYSPROG commands

The applications are best summarized by looking at Options 1 to 7 on the MVS OPERATOR WORKSTATION panel, shown in Figure 30.

| | | |
|--|---|-------------------|
| BMC Software ----- MVS OPERATOR WORKSTATION ----- AutoOPERATOR | | DATE -- 01/02/01 |
| OPTION ==> | | TIME -- 12:29:59 |
| | | USERID -- BAOMXY2 |
| | | MODE -- ISPF 4.8 |
| 1 | STATUS - Status of MVS System(s) | |
| 2 | VTAM - Display/Modify VTAM Resources | |
| 3 | OPER REQUEST- Outstanding Operator Requests | |
| 4 | ENQ/RESERVE - Display Enqueues and Reserves | |
| 5 | ADDR SPACE - Display/Modify Address Space Information | |
| 6 | TAPE - Display/Modify TAPE Devices | |
| 7 | DASD - Display/Modify DASD Devices | |
| X | EXIT - Terminate | PF1/13: HELP |
| | | PF3/15: EXIT |
| Copyright 2000, BMC Software, Inc. All rights reserved. | | |

Figure 30. MVS OPERATOR WORKSTATION Panel

MAINVIEW AutoOPERATOR for OS/390 application menus and panels display MVS resources and operational status for online monitoring and modification.

MVS Operations Control

The following applications are provided for MVS operations control:

- STATUS (Option 1)
- OPER REQUEST (Option 3)
- ADDR SPACE (Option 5)

SYSTEM STATUS

The SYSTEM STATUS application displays a summary of MVS status, watches selected jobs, and reports exceptions to normal system operation. In a multiimage MVS environment, MAINVIEW AutoOPERATOR can display ALERTs from all systems, local and remote.

This application has a two-part graph. The left-hand side graphs statistics on selected jobs. The right-hand side graphs key MVS resources, showing how close each value is to user-specified thresholds.

Below the graph area is a scrollable list of ALERTs, showing their text, origin, and the times they were received. An ALERT is an action or information message (for more information about MAINVIEW AutoOPERATOR ALERTs, refer to the *MAINVIEW AutoOPERATOR Basic Automation Guide*).

A follow-up EXEC associated with the ALERT can delete or otherwise follow up the ALERT. You also can delete the ALERT by deleting it from the ALERT DETAIL display.

To show all types of ALERTs or only critical ALERTs that require action, use the SYSTEM STATUS display. The PROFILE command allows you to customize thresholds and specify selected jobs to be displayed.

See Chapter 5, “SYSTEM STATUS Application” on page 75.

OPERATOR REQUESTS

The OPERATOR REQUESTS application displays outstanding messages that require action.

This application separates requests into three different categories and displays them on the OPERATOR REQUESTS panel in a scrollable display. The display lists the time each request was issued, the type of request, the jobname that issued it, the message ID, and the text. The three categories are:

- WTORs
- Outstanding mounts
- Action messages

This application can monitor up to eight MVS systems and provide a single consolidated display.

See Chapter 7, “OPERATOR REQUESTS Application” on page 103.

ADDRESS SPACES

The ADDRESS SPACES application is a scrollable display that shows detailed information about the system's batch jobs, started tasks, and TSO users.

Initially, all address spaces are sorted and displayed by ASID. Use primary commands to modify the display or sort them by any of the output fields on the panel, such as JOBNAME.

You can issue line commands that affect the operation of any job executing in a listed address space, just as if you were at the main console.

The ADDRESS SPACES PROFILE panel allows you to customize alarms. You can set alarm thresholds for excessive use for four system resources: CPU percentage, Paging, Real Memory, and SIOs.

See Chapter 9, “ADDRESS SPACES Application” on page 109.

MVS Resource Control

The resource applications display panels show status for:

- VTAM (Option 2)
- ENQ/RESERVE (Option 4)
- TAPE (Option 6)
- DASD (Option 7)

VTAM RESOURCES

The VTAM RESOURCES application provides the ability to display and modify major VTAM resources, such as major nodes, applications, cross-domain resources, lines, terminals, and terminal clusters. Line commands are provided to activate, inactivate, display, and force various VTAM resources.

See Chapter 6, “VTAM RESOURCES Application” on page 89.

ENQUEUE/RESERVE

The ENQUEUE/RESERVE application displays enqueues and reserves in several display modes. In the default Conflicts display mode, the application lists all active reserves and the enqueues for which users are waiting. Use primary commands to change display modes.

Use a line command to cancel an address space holding or waiting for a resource.

See Chapter 8, “ENQUEUE/RESERVE Application” on page 107.

TAPE STATUS/CONTROL

Use the TAPE STATUS/CONTROL application to display the status of any tape or cartridge device and issue commands to change its status. When the TAPE application is first invoked, a scrollable list of all online tape and cartridge drives on the target system is displayed.

Similar to the display you get with the MVS Display Unit command, the TAPE display shows the mount attributes and status of each drive, and identifies the volume mounted on it (if any). Enter primary commands to scan the list for a tape drive (UCB) or a volume (VOLSER), or to display a category of drives or a group of VOLSERS. Use line commands to change the status of a drive, just as if you were at the main console.

See Chapter 10, “TAPE STATUS/CONTROL Application” on page 117.

DASD STATUS/CONTROL

Use the DASD STATUS/CONTROL application to check the status of any direct access storage device and issue commands to change its status. When you first invoke the DASD application, a scrollable list of all online DASDs defined to the target system is displayed.

Similar to the display you get with the MVS Display Unit command, the DASD display shows the mount attributes and status of each device, and identifies the volume mounted on it. Use primary commands to scan the list for a device (UCB) or a volume (VOLSER), or to display a category of devices or a group of VOLSERS. Use line commands to change the status of a device, just as if you were at the main console.

See Chapter 11, “DASD STATUS/CONTROL Application” on page 121.

Chapter 5. SYSTEM STATUS Application

The SYSTEM STATUS application displays a summary of MVS status and selected jobs, and reports exceptions to normal system operation. There are three panels:

SYSTEM STATUS

Monitors selected jobs, displays a summary of MVS status, and reports critical exceptions to normal operations by displaying colored/highlighted ALERTs that require operator intervention.

SYSTEM STATUS PROFILE

Allows you to define job thresholds to be monitored on the System Status panel. These are set up after the AutoOPERATOR application is activated but can be changed at any time online.

See “SYSTEM STATUS PROFILE Panel” on page 82 for an explanation of this panel.

TARGET PROFILE SELECTION PANEL

Allows you to define individual profiles for up to 23 targets (plus the default).

See “TARGET PROFILE SELECTION Panel” on page 86 for an explanation of this panel.

Note: When you enter the SYSTEM STATUS application for the first time, the SYSTEM STATUS PROFILE panel is displayed. Pressing the END key saves the profile member MVSSTA00 before you return to the SYSTEM STATUS panel. When you invoke this application in the future, the profile member is already available and you enter the SYSTEM STATUS panel directly.

SYSTEM STATUS Panel

The SYSTEM STATUS panel has four areas, as shown in Figure 31 on page 76.

- Area 1** Has five fields showing the current system statistics
- Area 2** Displays the jobs being monitored and the CPU and SIO usage of these jobs. You can scroll this area by positioning the cursor on the COMMAND line or in the ALERT-related field and pressing the scroll down key.
- Area 3** Displays RESOURCE values by plotting a graph of values that are either above or below the thresholds you set. You can scroll this area by positioning the cursor within the area and pressing the scroll down key.
- Area 4** Displays ALERTs issued in response to exception conditions. You can scroll this area by positioning the cursor and pressing the scroll down key.

Use the primary command Sort to sort the ALERT display by Queue or Time. If you use **SORT TIME**, the ALERTs are sorted with the most recently issued ALERT at the top of the display. If you use **SORT QUEUE**, the ALERTs are sorted with the most recently created queue is shown at the top of this display.

| | | | | | | | | | | | | | | | |
|------------------|--|--|--|---|--|----------|--|--------------|--|------------|--|--------------|--|-------------------|--|
| BMC Software | | | | SYSTEM STATUS | | | | AutoOPERATOR | | | | | | | |
| COMMAND ==> | | | | | | | | TGT ==> SYSB | | | | | | | |
| INTERVAL ==> 1 | | | | INITS | | JOBS | | STCS | | TSUS | | CPU | | DATE --- 01/03/16 | |
| STATUS --- INPUT | | | | 9 | | 2 | | 39 | | 55 | | 97 | | TIME --- 09:37:55 | |
| JOBNAME | | | | CPU | | SIO | | RESOURCE | | THRESHOLD | | | | | |
| ----- | | | | 0 --- 5 | | 0 --- 10 | | ----- | | LOW <----- | | VALUE -----> | | HI | |
| MVSSSC | | | | > | | | | TOTCPU | | 5 (97) | | 20 : 90 | | ===== > 100 | |
| JES2 S | | | | ==35=> | | | | JOB CPU | | 10 (57) | | 10 : 50 | | => 80 | |
| CMFXA S | | | | | | > | | TSO CPU | | 5 <===== | | 10 : 50 | | (1) 80 | |
| MKT21 | | | | | | | | STC CPU | | 5 <= | | 10 : 50 | | (7) 80 | |
| CICS61BX J | | | | | | | | TOT SIO | | 5 | | 10 : 80 | | 90 | |
| LGS61 T | | | | | | ==75=> | | CSABLO | | 30 <== | | 40 : 90 | | (24) 100 | |
| CICS2101 S | | | | ==25=> | | | | CSABV | | 5 (48) | | 10 : 30 | | => 60 | |
| ----- | | | | | | | | DEMPAG | | 20 | | 40 : 80 | | 90 | |
| ----- | | | | | | | | UIC | | 0 | | 50 : 100 | | 150 | |
| ----- | | | | | | | | PDT | | 0 | | 30 : 60 | | 150 | |
| ----- | | | | | | | | | | | | | | | |
| TIME ORIGIN | | | | Alerts ----- Total 6 ----- Sorted by ==> TIME | | | | 6 | | | | | | | |
| 09:09 CB1X | | | | DALLAS LINE - LOBLAA02, NOTIFY SYSTEMS | | | | | | | | | | | |
| 08:57 CB1X | | | | QA1 IS CURRENTLY USING 1.7 IN 3 SEC OR 57% | | | | | | | | | | | |
| 08:09 CB1X | | | | DALLAS LINE - LOBLAA02, NOTIFY SYSTEMS | | | | | | | | | | | |
| 07:57 CB1X | | | | QA1 IS CURRENTLY USING 1.7 IN 3 SEC OR 57% | | | | | | | | | | | |
| 06:00 CB1X | | | | SYSBSMF1 (STC) - ENTER 'YES' TO CANCEL | | | | | | | | | | | |
| 04:30 CB1X | | | | QA1 IS CURRENTLY USING 3.2 IN 3 SEC OR 77% | | | | | | | | | | | |
| ***** | | | | END OF ALERTS | | | | ***** | | | | | | | |

Figure 31. SYSTEM STATUS Panel — View 1

To see the rest of the **RESOURCE** and **THRESHOLD** area (Area 3), place the cursor anywhere in Area 2 or Area 3 and press PF8/20 to scroll down. Figure 32 on page 77 displays the **SYSTEM STATUS** panel after you scroll down.

| | | | | | | | | | | | | | | | |
|--------------------|--|--|--|---------------------|--|----------|--|--------------|--|------|--|-----------------------------|--|-------------------|--|
| BMC Software ----- | | | | SYSTEM STATUS ----- | | | | AutoOPERATOR | | | | | | | |
| COMMAND ==> | | | | | | | | TGT ==> SYSB | | | | | | | |
| INTERVAL ==> 1 | | | | INITS | | JOBS | | STCS | | TSUS | | CPU | | DATE --- 01/03/16 | |
| STATUS --- INPUT | | | | 9 | | 2 | | 39 | | 55 | | 97 | | TIME --- 09:37:55 | |
| JOBNAME | | | | -- CPU -- | | - SIO - | | RESOURCE | | | | THRESHOLD ----- | | | |
| ----- | | | | 0 --- 5 | | 0 --- 10 | | LOW <----- | | | | VALUE ----- > HI | | | |
| MKT31 | | | | | | | | TOTPAG | | | | 0 : 100 =====> 200 | | | |
| ----- | | | | | | | | SWAP | | | | 35 (156) 60 : 90 =====> 100 | | | |
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CPU Percentage of CPU being used at the current time.

If CPU usage is at maximum, any address spaces that cannot get dispatched are added to this value. For example, a CPU value of 103 indicates that three address spaces are waiting to get dispatched.

CPU figures are neither MDF nor PR/SM adjusted. This is true for all CPU figures in the online applications.

Primary Commands

You can enter the following commands in the COMMAND field of the SYSTEM STATUS panel.

| Command | Description |
|----------------|--|
| GO | Start auto-refresh the SYSTEM STATUS panel |
| PROFILE | Display SYSTEM STATUS PROFILE panel |
| SORT | Allows you to sort the ALERTs display by TIME or QUEUE. |
| | If you use SORT TIME , the ALERTs will be sorted with the most recently issued ALERT at the top of the display. If you use SORT QUEUE , the ALERTs will be sorted by queue with the most recently created queue at the top of the display. |

Area 2 - Job Watch Display

This area lists the jobs being monitored, along with the graphs that plot statistics on the CPU utilization and IO rate per second for each job.

| JOBNAME | -- CPU -- | - SIO - |
|------------|-----------|----------|
| ----- | 0 --- 5 | 0 --- 10 |
| MVSSC | ==25==> | |
| JES2 S | ==> | |
| CMFXA S | | => |
| MKT21 | ==32==> | |
| CICS61BX J | | |
| LGS61 T | | ==70==> |
| CICS2101 S | ==40==> | |
| MKT31 | | |
| JEB1 S | ==> | => |
| BBISS T | | |
| ----- | ----- | ----- |

The one-position code following each job name indicates the address space type:

| | |
|--------------|--------------------------|
| S | Started Tasks |
| T | Time Sharing Users |
| J | Batch Job |
| blank | Address Space Not Active |

You set up the job selection and monitoring criteria in the SYSTEM STATUS PROFILE panel. JOBNAMES added to the PROFILE are permanent. You can add a JOBNAMES for the current session only by overtyping another JOBNAMES. This new job does not have an alarm set (see “Setting Thresholds” on page 84). Similarly, you can delete a JOBNAMES for the current session by blanking it out.

WATCH EXEC for Selected JOBNAMEs (\$WATCH)

You can initiate an EXEC named \$WATCH to determine the CPU usage for any JOBNAME. Place the cursor anywhere on the line of a selected JOBNAME on the SYSTEM STATUS panel and press ENTER.

For example, if the cursor is on the CMFXA job name and you press ENTER, \$WATCH CMFXA appears in the upper right corner of the panel. The EXEC becomes active and displays a message in the ALERTs area for review.

Scrolling Jobs

You can set up a maximum of 20 jobs in the SYSTEM STATUS PROFILE panel. The first 10 jobs appear on the SYSTEM STATUS panel. Put the cursor on Area 2 and press PF7/19 or PF8/20 to scroll up or down to see all the jobs being monitored.

Area 3 - Resource Definitions

Area 3 lists resource definitions under the RESOURCE column that are set up on the SYSTEM STATUS PROFILE panel.

| RESOURCE | THRESHOLD | | | |
|----------|-----------|----------|----------|--|
| | LOW | VALUE | HI | |
| TOTCPU | 5 | 20 : 90 | 100 | |
| JOBCPU | 10 | 10 : 50 | 80 | |
| TSOCPU | 5 | 10 : 50 | (3) 80 | |
| STCCPU | 5 | 10 : 50 | 80 | |
| TOTSI O | 5 | 10 : 80 | 90 | |
| CSABLO | 30 | 40 : 90 | 100 | |
| CSAABV | 5 | 10 : 30 | 60 | |
| DEMPAG | 20 | 40 : 80 | 90 | |
| UIC | 0 | 50 : 100 | 150 | |
| PDT | 0 | 30 : 60 | 150 | |
| TOTPAG | 0 | 0 : 100 | 200 | |
| SWAP | 35 | 60 : 90 | 100 | |

In this graph, TSOCPU (CPU usage attributed to all TSO users) has a mid-range threshold of 10 to 50 percent for CPU utilization. The arrow indicates that usage has fallen below 10 percent and the number on the right side, (3), indicates that TSOCPU is only 3 percent.

The usage is shown as either a yellow bar or an arrow (depending on the type of terminal you use). If the rate falls outside of the low or high range, then the rate is shown as a red bar or as a highlighted arrow.

The next example plots the same resource definitions as the above graph, but with values that are ABOVE the expected results.

| RESOURCE | ----- | THRESHOLD | ----- |
|----------|-------|-----------|-----------|
| ----- | LOW | <----- | VALUE |
| | | | -----> HI |
| TOTCPU | 5 | 20 : 90 | 100 |
| JOBCPU | 10 | 10 : 50 | 80 |
| TSOCPU | 5 | 10 : 50 | 80 |
| STCCPU | 5 | 10 : 50 | 80 |
| TOTSI 0 | 5 | 10 : 80 | 90 |
| CSABLO | 30 | 40 : 90 | 100 |
| CSAABV | 5 | 10 : 30 | 60 |
| DEMPAG | 20 | 40 : 80 | 90 |
| UIC | 0 | 50 : 100 | 150 |
| PDT | 0 | 30 : 60 | 150 |
| TOTPAG | 0 | 0 : 100 | 200 |
| SWAP | 35 | 60 : 90 | 100 |

In this graph, TSOCPU has activity higher than 50 percent as the arrow indicates (or, if your monitor supports it, a bar). The number on the left, (70), gives the percentage being used.

If the arrow goes above the high value of 80, the arrow turns red or is highlighted as an alarm. Arrows do not appear on the graph when the activity is between the desired mid-threshold percentages.

Scrolling Thresholds

There can be more than 10 values monitored under the Value heading. To see all the values, move the cursor to one of the values and press PF7/19 or PF8/20 to scroll up or down.

EXECs for Resources

Use Area 3 to enter a command to initiate an EXEC to determine specific information for a RESOURCE name. Put the cursor anywhere on the line of a selected RESOURCE name and press the ENTER key. The EXEC that matches that name appears in the upper right corner of the panel. The EXEC becomes active and displays a message in the ALERTS area.

If the cursor is on the TSOCPU line and ENTER is pressed, the message EXEC \$TSOCPU SCHEDLD appears in the upper right corner of the panel and the alert message:

```
07: 57 CB1X      QA1 IS CURRENTLY USING 1.7 IN 3 SEC OR 57%
07: 57 CB1X      QA1 (TSU) - ENTER 'YES' TO CANCEL
```

appears at the bottom of the SYSTEM STATUS panel.

The following EXECs are available for the resources.

| EXEC | Description |
|-----------------|--|
| \$CSAABV | Displays the names of the five address spaces using the most CSA above the line in descending order. |
| \$CSABLO | Displays the names of the five address spaces using the most CSA below the line in descending order. |

| | |
|------------------|--|
| \$TOTSIO | Displays the five devices with the highest I/O counts in the system in descending order. You can select any or all of the alerts from the ALERT application for more information. When an alert is selected by entering an s in the RSP column, additional alerts are displayed. These alerts show each address space that uses that volume and the percentage of I/O to that volume the address space used during a 15-second interval. |
| \$JOB CPU | Displays the job using the highest percentage of CPU and allows the TS user to cancel the job if necessary. |
| \$STCCPU | Displays the started task using the highest percentage of CPU and allows the TS user to cancel the job if necessary. |
| \$TOTCPU | Displays the highest user of CPU and allows the TS user to cancel the address space if necessary. |
| \$TSO CPU | Displays the TSO user using the highest percentage of CPU and allows the TS user to cancel the TSO address space. |

EXECs for TOTPA, DEMPAG, PDT, UIC, and SWAP are not available at this time.

Area 4 - ALERTS Action and Information Messages

Area 4 displays action and information messages called warnings or alerts issued in response to exception conditions.

```

TIME  ORIGIN  Alerts ----- Total 6 ----- Sorted by ==> TIME      6
08:05 CB1X   DALLAS LINE - LOBLAA02 - IMOP, NOTIFY SYSTEMS
08:02 CB1X   NONAME SUBMITTED CMFXA AT
08:02 CB1X   CMFXA HAS RUN FOR OF
07:57 CB1X   SYSBSMF1 (STC) - ENTER 'YES' TO CANCEL
07:57 CB1X   QA1 IS CURRENTLY USING 1.7 IN 3 SEC OR 57%
07:57 CB1X   QA1 (TSU) - ENTER 'YES' TO CANCEL
07:57 CB1X   LGS1GZIL IS CURRENTLY USING 0.7 IN 3 SEC OR 26%
07:57 CB1X   LGS1GZIL (JOB) - ENTER 'YES' TO CANCEL
                      ***** END OF ALERTS *****

```

Alerts received are maintained in different queues in the AutoOPERATOR Control Address Space. The alert queue is a push-down queue: the most recent alert is at the top of the list. The alerts queued in the AutoOPERATOR Address Space can originate in the local system or in a remote system.

Use the primary command Sort to sort the ALERT display by Queue or Time. If you use SORT TIME, the ALERTs are sorted with the most recently issued ALERT at the top of the display. If you use SORT QUEUE, the ALERTs are sorted with the most recently created queue is shown at the top of this display.

Set the initial sort order on the SYSTEM STATUS Profile panel. The default is QUEUE.

The panel displays the texts of the alerts. You can delete an alert from the alert queue or respond to an ALERT by transferring to the ALERT DETAIL Application and deleting (or responding to) the ALERT. See the *MAINVIEW AutoOPERATOR Basic Automation Guide* for more information on the ALERT applications.

SYSTEM STATUS PROFILE Panel

SYSTEM STATUS PROFILE panel fields control the output data on the SYSTEM STATUS panel. You can revise each field at any time to change the selection of jobs or the monitoring criteria. To access this panel, enter PROFILE on the command line of the SYSTEM STATUS panel.

On the SYSTEM STATUS panel, the GRAPH SCALE and JOB WATCH THRESHOLDS display the Job Watch and the CPU percentage and SIO rate per second input fields. You set these thresholds on the SYSTEM STATUS PROFILE panel and overtype the names on the SYSTEM STATUS panel.

RESOURCE THRESHOLDS display the RESOURCE threshold fields that can be overtyped in the RESOURCE THRESHOLD area of the SYSTEM STATUS PROFILE panel to define the Low, Mid, and High thresholds.

| | | | | | | | | |
|---|-----|-----|-----------------------------|-----|-----|-------------------|------|--|
| BMC Software ----- | | | SYSTEM STATUS PROFILE ----- | | | AutoOPERATOR | | |
| COMMAND ==> | | | | | | DATE --- 01/03/08 | | |
| | | | | | | TIME --- 12:24:01 | | |
| ----- Jobwatch ----- | | | ----- Thresholds ----- | | | | | |
| MAXCPU | ==> | 5 | | | | | | |
| MAXSIO | ==> | 5 | | | | | | |
| Jobname | CPU | SIO | Value | Low | Mid | Mid | High | |
| ==> MDB1AXPT | 3 | 50 | ==> TOTCPU | 0 | 20 | 90 | 100 | |
| ==> KTW1A | 3 | 50 | ==> JOBCPU | 0 | 10 | 50 | 80 | |
| ==> NETAVAIL | 3 | 50 | ==> TSOCPU | 0 | 10 | 50 | 80 | |
| ==> LGS41 | 3 | 50 | ==> STCCPU | 0 | 10 | 50 | 80 | |
| ==> CICS2102 | 3 | 50 | ==> TOTSI0 | 0 | 10 | 80 | 100 | |
| ==> CICS1702 | 3 | 50 | ==> CSABLO | 0 | 40 | 90 | 100 | |
| ==> DB2CDBMI | 3 | 50 | ==> CSAABV | 0 | 10 | 30 | 100 | |
| ==> NETB | 3 | 50 | ==> DEMPAG | 0 | 0 | 50 | 100 | |
| ==> DUMPSRV | 3 | 50 | ==> UIC | 0 | 50 | 100 | 100 | |
| ==> IMS31X | 3 | 50 | ==> PDT | 0 | 30 | 60 | 120 | |
| Queues | ==> | / | / | / | / | / | / | |
| Priorities | ==> | /* | /* | /* | /* | /* | /* | |
| Enter CANCEL to cancel, END to save, TARGETS to invoke target profiling | | | | | | | | |

Figure 33. SYSTEM STATUS PROFILE Panel — View 1

To see the rest of the THRESHOLDS area, place the cursor in the thresholds area and press PF8/20 to scroll down. Figure 34 on page 83 displays the SYSTEM STATUS PROFILE panel after you scroll down.

```

BMC Software ----- SYSTEM STATUS PROFILE ----- AutoOPERATOR
COMMAND ==>

                                         DATE --- 01/03/08
                                         TIME --- 12:24:01

----- Jobwatch -----                ----- Thresholds -----
MAXCPU ==> 5
MAXSIO ==> 5

      Jobname    CPU    SIO      Val ue    Low    Mi d    Mi d    Hi gh
==> DB2CMSTR    3      50      ==> TOTPAG    0      0    100    200
==> JES2        3      50      ==> SWAP      0      0     60    100
==> _____  0      0                      0      0     0     0
==> _____  0      0                      0      0     0     0
==> _____  0      0                      0      0     0     0
==> _____  0      0                      0      0     0     0
==> _____  0      0                      0      0     0     0
==> _____  0      0                      0      0     0     0
==> _____  0      0                      0      0     0     0
==> _____  0      0                      0      0     0     0
==> _____  0      0                      0      0     0     0

Queues ==>      /      /      /
Priorities==>  /*     /*     /*

Enter CANCEL to cancel, END to save, TARGETS to invoke target profiling

```

Figure 34. SYSTEM STATUS PROFILE Panel — View 2

This panel allows you to enter:

- Job names to be monitored
- Job thresholds for CPU and SIO utilization
- Resource names to be monitored
- Resource threshold requirements

You can also access the TARGET PROFILE SELECTION panel from this screen. Refer to “TARGET PROFILE SELECTION Panel” on page 86 for more information about this feature.

A maximum of 20 entries can be made under each heading.

Monitoring Criteria

The following is an example of the fields defined in the SYSTEM STATUS PROFILE panel to control the activity of the Job Watch Display on the SYSTEM STATUS panel.

```

GRAPH SCALE OF JOB

MAXCPU ==> 5
MAXSIO ==> 10

```

In this example, the CPU graph has a scale of 0 - 5 percent. The SIO graph has a scale set from 0 - 10 percent. Figure 31 on page 76 displays the activity of the selected jobs using this percentage and rate criteria.

If MAXCPU is set to 100 percent and a job used only 2 or 3 percent of the MAXCPU, the graph could not display any usable information. This is also true of the MAXIO field.

Jobname Selection

This area of the SYSTEM STATUS PROFILE panel lists jobs to be monitored by AutoOPERATOR.

| JOB WATCH THRESHOLDS: | | | |
|-----------------------|---------|-----|-----|
| | Jobname | CPU | SIO |
| ==> | MVSSSC | 20 | 50 |
| ==> | JES2 | 20 | 50 |
| ==> | CMFXA | 20 | 50 |

The jobs appear in the SYSTEM STATUS panel under the JOBNAME field.

Setting Thresholds

The CPU and SIO fields that correspond to the Jobnames are set up as thresholds to indicate when a job uses more CPU or SIO than specified. In the above example, an alarm for job MVSSSC is issued if the job uses more than 20 percent of the CPU. Depending on your terminal, an alarm is shown either as a highlighted arrow or a red bar.

The arrow also displays the actual percentage value of usage for CPU and the rate value for SIO when an alarm is set, such as ==25=>.

Monitoring Value Criteria

The following is an example of the fields set up on the SYSTEM STATUS PROFILE panel for the threshold values. Each resource to be monitored must be listed under the RESOURCE column heading.

| RESOURCE THRESHOLDS: | | | | |
|----------------------|--------|-----|-----|------|
| | Name | Low | Mid | High |
| ==> | TOTCPU | 5 | 20 | 90 |
| ==> | JOBCPU | 10 | 10 | 50 |
| ==> | TSOCPU | 5 | 10 | 50 |

The midpoint range (Mid) determines the acceptable ratio of machine use and appears under the THRESHOLDS heading. The low and high values are used as thresholds in the RESOURCE Area as described in “Area 3 - Resource Definitions” on page 79.

If TSO CPU falls below a threshold of 5 percent or above 80 percent for TSOCPU, the entire line is highlighted or displayed in red. This can be used as a diagnostic tool for any necessary corrective action.

Resource Definitions

You can select the following resource definitions for graphic display on the right side of the SYSTEM STATUS panel:

| Resource | Definition |
|----------|---|
| TOTCPU | Total CPU being used by all address spaces in the system |
| JOBCPU | Total CPU being used by all initiated jobs in the system |
| TSOCPU | Total CPU being used by all TSO users in the system |
| SWAP | System-wide swapping rate |
| CSABLO | Common storage used below the 16Mb line |
| CSAABV | Common storage used above the 16Mb line |
| TOTPAG | Total system paging rate |
| DEMPAG | System-wide demand paging rate |
| STCCPU | Total CPU being used by all started values in the system |
| TOTSIO | Total SIO rate |
| PDT | Page delay time in milliseconds |
| | Values for the PDT field will always be 0 for releases of MVS/SP 3.1.3 and above. |
| UIC | Average of unreferenced interval counts |

Primary Commands

You can use the following commands in the COMMAND field of the SYSTEM STATUS PROFILE panel.

| Command | Description |
|---------|-------------------|
| END | To save changes |
| CANCEL | To cancel changes |

Queues and Priorities

| | | | | |
|------------|-------|---|-----|-----|
| Queues | ====> | / | / | / |
| Priorities | ====> | * | / * | / * |

The Queues and Priorities fields allow you to display the alerts for a specific queue (up to four queues) and allow you to select the priority levels of the ALERTs to display.

For example, you can enter NETWORK in the Queues field and MAJOR and CRITICAL in the Priorities field to display all the major and critical alerts for the NETWORK queue.

Note: You must delete any asterisks from the unused or remaining input fields when you specify a queue or a priority. The asterisk defaults to all queues and all levels of priorities.

TARGET PROFILE SELECTION Panel

Use the TARGET PROFILE SELECTION panel to define individual profiles for up to 23 targets plus a default target.

To create a new profile for an undefined MVS target:

- 1. Change the TGT system name on the SYSTEM STATUS panel to the target name for which you want to create a profile.
- 2. Enter the primary command TARGETS on the COMMAND line and press ENTER.

Figure 35 shows an example of the TARGET PROFILE SELECTION panel.

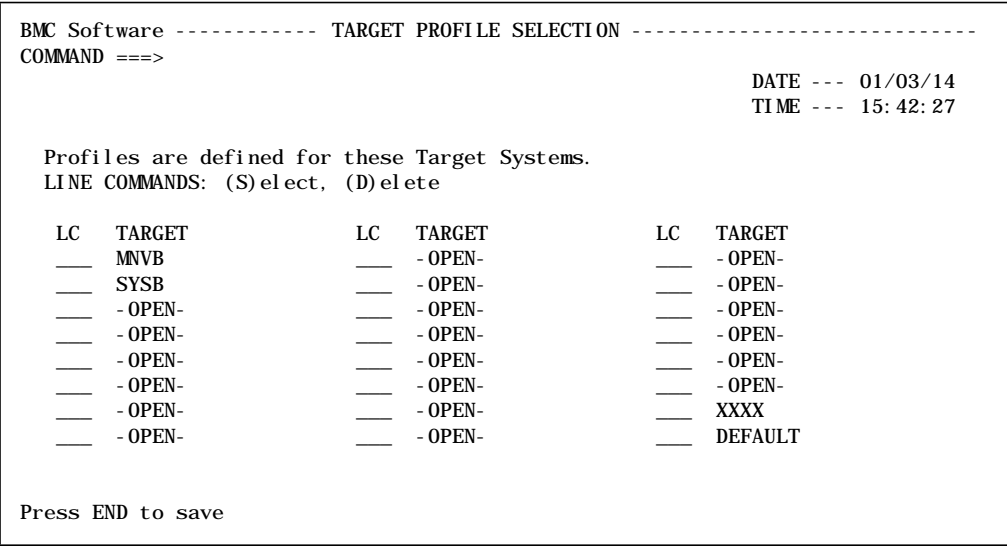


Figure 35. TARGET PROFILE SELECTION Panel

You can enter the following commands in the LC column of this display:

| Command | Description |
|---------|---|
| S | Use S (select) to select an -OPEN- slot for use by the MVS target system (shown in the TGT field of the System Status application, Figure 31 on page 76). |
| D | Use D (delete) to make the indicated system profile slot available for use and remove the target from the profile. |

After you assign a slot for a target, press PF3 to display the SYSTEM STATUS PROFILE screen. You can now modify the SYSTEM STATUS PROFILE panel to create your profile.

Note: You cannot delete (D) a currently active target from this panel. You also cannot assign a target system twice.

Updating the Default Target System

To update the profile for the default target system, enter DEFAULT in the TGT field of the SYSTEM STATUS panel, type PROFILE on the COMMAND line, and press ENTER. The profile panel for the default target system is displayed and you can modify the panel.

Chapter 6. VTAM RESOURCES Application

When you select option 2, VTAM, from the MVS OPERATOR WORKSTATION panel, you get the VTAM RESOURCES menu shown in Figure 36.

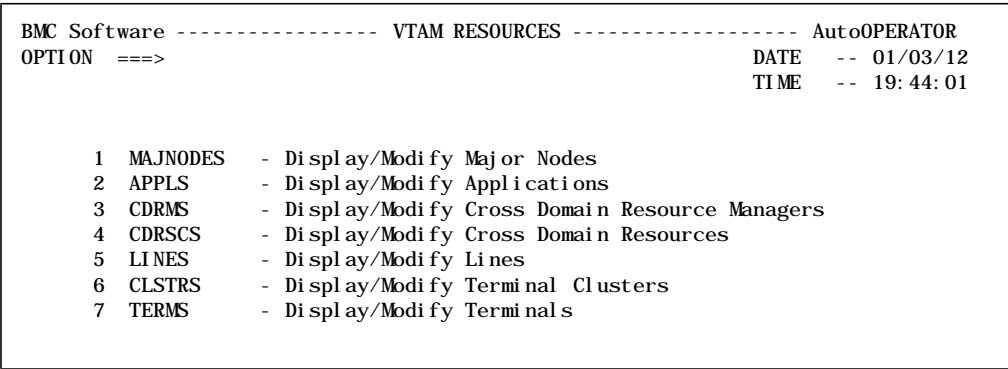


Figure 36. VTAM RESOURCES Menu

The VTAM RESOURCES application displays VTAM resources, such as major nodes, cross-domain resources, lines, and terminal clusters. On these displays, you can use one-character line commands to activate, inactivate, or force inactivate selected resources.

From the VTAM RESOURCES menu, select the VTAM resource you want to view or control by entering the corresponding number in the OPTION field.

Primary Commands

Enter the following primary commands in the COMMAND field of each of the seven VTAM RESOURCES applications.

| Command | Description |
|--------------------------|--|
| L nodename | Locate a specific major node |
| SELECT status OFF | Select nodenames of a particular status; OFF selects all nodenames |
| GO | Start auto-refresh of this application |
| SYSTEM | Change the target system or subsystem |
| sc | Scrolling commands |
| xx | Application transfer commands |

VTAM MAJOR NODES

Select option 1 from the VTAM RESOURCES menu to display all active major nodes, as shown in Figure 37.

```
BMC Software ----- VTAM MAJOR NODES ----- AutoOPERATOR
COMMAND ==>>
INTVL==> 1
STATUS=> INPUT
LC CMDS --- (A)ct, (I)nact, (F)orce (D)isplay, (DE) Display Every, (E)xpand
LC NODENAME ----- TYPE ----- STATUS -----
___ BBGG LCL 3270 MAJ NODE ACTI V
___ ACIC01 APPL SEGMENT ACTI V
___ CICS01 APPL SEGMENT ACTI V
___ QACICS01 APPL SEGMENT ACTI V
___ AVAMB APPL SEGMENT ACTI V
___ ABBVTM APPL SEGMENT ACTI V
___ IMSB APPL SEGMENT ACTI V
___ BBIAPPLB APPL SEGMENT ACTI V
___ BBI CDRMA CDRSC SEGMENT ACTI V
___ IMFAPPL APPL SEGMENT ACTI V
___ TSP32 APPL SEGMENT ACTI V
___ A01APPLS APPL SEGMENT ACTI V
___ A01NPM APPL SEGMENT ACTI V
___ AIMF01 APPL SEGMENT ACTI V
___ SWTCHAPB APPL SEGMENT ACTI V
```

Figure 37. VTAM MAJOR NODES Panel

Use the VTAM MAJOR NODES panel to check the status of a VTAM major node and change its status. Like the display shown for the D NET,MAJNODES command, the scrollable list shows the nodename, type of major node, and status for those nodes defined for the Systems Services Control Point (SSCP).

Use primary commands to scan the list for a specific NODENAME or display MAJOR NODES in a particular STATUS. Use line commands to change the status of a node, just as if you were at the main console.

The possible TYPEs for the NODENAMEs include:

| Node Type | Description |
|-------------------|--|
| APPL SEGMENT | Application program major node |
| CA MAJ NODE | Channel-attachment major node |
| CDRM SEGMENT | Cross-domain resource manager major node |
| CDRSC SEGMENT | Cross-domain resource major node |
| LCL 3270 MAJ NODE | Local 3270 major node |
| LCL SNA MAJ NODE | Channel-attached(local) major node consisting of one or more SNA cluster controllers |

| | |
|-------------------------|---|
| PU T4/5 MAJ NODE | Communication controller or a host with an SSCP |
| SW SNA MAJ NODE | Switched SNA major node |

The STATUS column lists the VTAM status abbreviations. Refer to the appendix “Resource Status Codes” in the IBM publication *VTAM Messages and Codes* for definitions of these status abbreviations.

Line Commands

Enter the following commands in the LC column next to the resource you want to modify.

| Command | VTAM Equivalent |
|-------------------------|------------------------------------|
| A(ct) | V NET,ACT,ID=nodename |
| I(nact) | V NET,INACT,ID=nodename |
| F(orce) | V NET,INACT,ID=nodename,TYPE=FORCE |
| D(isplay) | D NET,ID=nodename |
| D(isplay)E(very) | D NET,ID=nodename,E |
| E(xpand) | Invoke VTAM MAJNODE DETAIL DISPLAY |

Another way to invoke the VTAM MAJNODE DETAIL DISPLAY is to type EXPAND on the COMMAND line, position the cursor at the desired nodename, and press ENTER. You can assign the EXPAND command to a PF key.

VTAM APPLICATIONS

Select option 2 from the VTAM RESOURCES menu to display all active application program major nodes and the application programs contained in those nodes, as shown in Figure 38.

```

BMC Software ----- VTAM APPLICATIONS ----- AutoOPERATOR
COMMAND ==>
INTVL==> 1
STATUS=> INPUT
LC CMDS --- (A)ct, (I)nact, (F)orce, I(M)ediate, (D)isplay, (DE)isplay Every
LC  APPLNAME MAJNODE ----- STATUS -----
--- VTAMB VTAMSEG ACTI V
--- I STATA00 VTAMSEG CONCT
--- I STNOP VTAMSEG ACTI V
--- I STPDCLU VTAMSEG ACTI V
--- ADMPRI NT AGDM01 ACTI V
--- BTSOB BBTSOB ACTI V
--- BTSOB001 BBTSOB ACTI V
--- BTSOB002 BBTSOB ACTI V
--- BTSOB003 BBTSOB ACTI V
--- BTSOB004 BBTSOB ACTI V
--- BTSOB005 BBTSOB ACTI V
--- BTSOB006 BBTSOB ACTI V
--- BTSOB007 BBTSOB ACTI V
--- BTSOB008 BBTSOB ACTI V
--- BTSOB009 BBTSOB ACTI V
--- BTSOB010 BBTSOB ACTI V
--- BTSOB011 BBTSOB ACTI V
--- BTSOB012 BBTSOB ACTI V

```

Figure 38. VTAM APPLICATIONS Panel

Use the VTAM APPLICATIONS panel to check the status of a VTAM application and change its status. Like the display shown for the D NET,APPLS command, the scrollable list shows the application name, the owning major node, and status of the applications.

Use primary commands to scan the list for a specific APPLNAME or display APPLNAMES in a particular STATUS. Use line commands to change the status of an application, just as if you were at the main console.

The STATUS column lists the VTAM status abbreviations. Refer to the appendix “Resource Status Codes” in the IBM publication *VTAM Messages and Codes* for definitions of these status abbreviations.

Line Commands

Enter the following commands in the LC column next to the resource you want to modify.

| Command | VTAM Equivalent |
|-------------------------|-------------------------------------|
| A(ct) | V NET,ACT,ID=appliance |
| I(nact) | V NET,INACT,ID=appliance |
| F(orce) | V NET,INACT,ID=appliance,TYPE=FORCE |
| (i)M(mediate) | V NET,INACT,ID=appliance,TYPE=IMMED |
| D(isplay) | D NET,ID=appliance |
| D(isplay)E(very) | D NET,ID=appliance,E |

VTAM CDRMS

Select option 3 from the VTAM RESOURCES menu to display all active major nodes, as shown in Figure 39.

```
BMC Software ----- VTAM CDRMS ----- AutoOPERATOR
COMMAND ==>
INTVL==> 1
STATUS=> INPUT
LC CMDS --- (A)ct, (I)nact, (F)orce, I(M)ediate, (D)isplay, (DE)isplay Every
LC CDRMNAME MAJNODE SUBAREA ELEMENT NETID ---- STATUS ----
___ VTAMA CDRMOO 5 1 USB00LO1 ACTIV
___ VTAMB CDRMOO 6 1 USB00LO1 ACTIV
___ SUB04 CDRMOO 4 1 USB00LO1 ACTIV
___ SUB09 CDRMOO 9 1 USB00LO1 NEVAC
___ SUB12 CDRMOO 12 1 USB00LO1 PACDR
***** END OF VTAM CDRMS *****
```

Figure 39. VTAM CDRMS Panel

Use the VTAM CDRMS panel to check the status of all VTAM cross-domain resource managers known to this VTAM. Like the display shown for the D NET,CDRMS command, the scrollable list shows the CDRM name, the owning major node, subarea number, element number, network identifier of the host, and the status of the CDRM. defined for the Systems Services Control Point (SSCP).

Use primary commands to scan the list for a specific CDRM name or display CDRMs in a particular STATUS. Use line commands to change the status of a CDRM, just as if you were at the main console.

The following list describes the fields and columns.

| Column | Description |
|----------|---|
| CDRMNAME | Name given to the CDRM by the installation system programmer. |
| MAJNODE | Name of the owning VTAM node. |
| SUBAREA | Subarea address in decimal. |
| ELEMENT | Element address in decimal. |
| NETID | Indicates the host's network. |
| STATUS | Lists the VTAM status abbreviations. Refer to the appendix “Resource Status Codes” in the IBM publication <i>VTAM Messages and Codes</i> for definitions of these status abbreviations. |

Line Commands

Enter the following commands in the LC column next to the resource you want to modify.

| Command | VTAM Equivalent |
|-------------------------|-----------------------------------|
| A(ct) | V NET,ACT,ID=cdmname |
| I(nact) | V NET,INACT,ID=cdmname |
| F(orce) | V NET,INACT,ID=cdmname,TYPE=FORCE |
| (i)M(mediate) | V NET,INACT,ID=cdmname,TYPE=IMMED |
| D(isplay) | D NET,ID=cdmname |
| D(isplay)E(very) | D NET,ID=cdmname,E |

VTAM CDRSCS

Select option 4 from the VTAM RESOURCES menu to display all cross-domain resources, as shown in Figure 40.

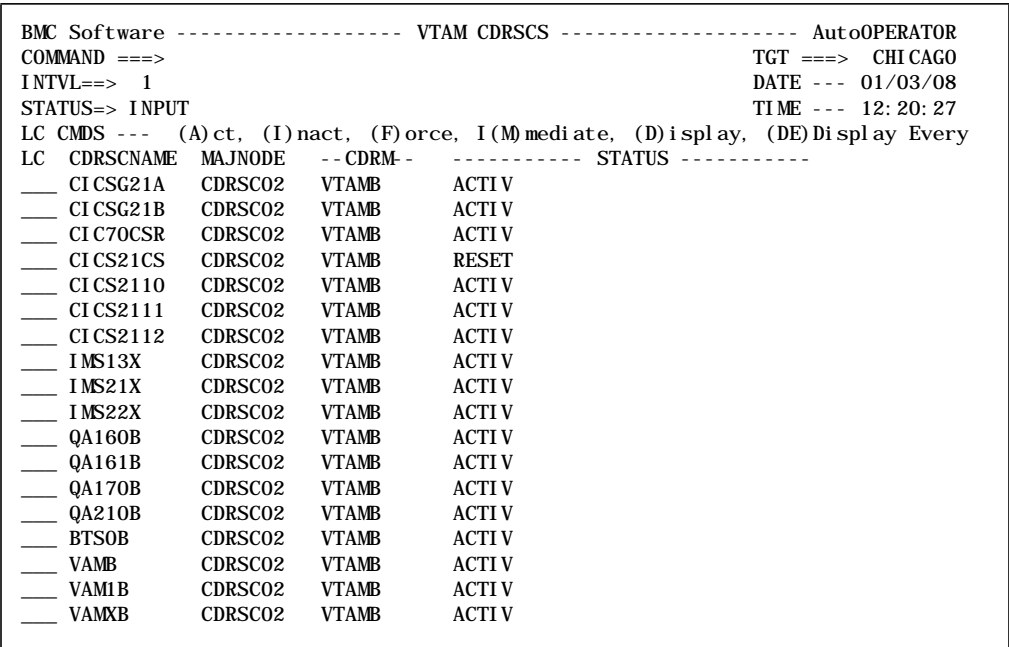


Figure 40. VTAM CDRSCS Panel

Use the VTAM CDRSCS panel to check the status of all VTAM cross-domain resources known to this VTAM. Like the display shown for the D NET,CDRSCS command, the scrollable list shows the CDRSC name, the owning CDRM, and the status of the CDRSC.

Use primary commands to scan the list for a specific CDRSC name or display CDRSCs in a particular STATUS. Use line commands to change the status of a CDRSC, just as if you were at the main console.

The fields or columns on the display are defined below.

| Column | Description |
|-----------|---|
| CDRSCNAME | Name given to the resource by the installation system programmer. |
| MAJNODE | Name of the owning VTAM node. |
| CDRM | Name of the controlling CDRM. |
| STATUS | Lists the VTAM status abbreviations. Refer to the appendix “Resource Status Codes” in the IBM publication <i>VTAM Messages and Codes</i> for definitions of these status abbreviations. |

Line Commands

Enter the following commands in the LC column next to the resource you want to modify.

| Command | VTAM Equivalent |
|-------------------------|-------------------------------------|
| A(ct) | V NET,ACT,ID=cdrscname |
| I(nact) | V NET,INACT,ID=cdrscname |
| F(orce) | V NET,INACT,ID=cdrscname,TYPE=FORCE |
| (i)M(mediate) | V NET,INACT,ID=cdrscname,TYPE=IMMED |
| D(isplay) | D NET,ID=cdrscname |
| D(isplay)E(very) | D NET,ID=cdrscname,E |

VTAM LINES

Select option 5 from the VTAM RESOURCES menu to display the status of all lines, as shown in Figure 41.

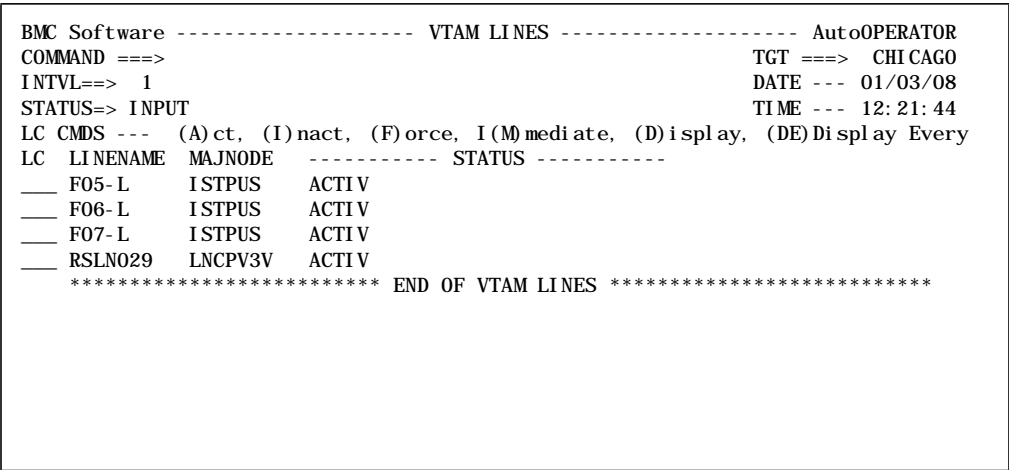


Figure 41. VTAM LINES Panel

Use the VTAM LINES panel to check the status of all communication lines known to this VTAM. Like the display shown for the D NET,LINES command, the scrollable list shows the line name, the owning major node, and status of the lines.

Use primary commands to scan the list for a specific line or display lines in a particular STATUS. Use line commands to change the status of a LINENAME, just as if you were at the main console.

The STATUS column lists the VTAM status abbreviations. Refer to the appendix “Resource Status Codes” in the IBM publication *VTAM Messages and Codes* for definitions of these status abbreviations.

Line Commands

Enter the following commands in the LC column next to the resource you want to modify.

| Command | VTAM Equivalent |
|------------------|------------------------------------|
| A(ct) | V NET,ACT,ID=linename |
| I(nact) | V NET,INACT,ID=linename |
| F(orce) | V NET,INACT,ID=linename,TYPE=FORCE |
| (i)M(mediate) | V NET,INACT,ID=linename,TYPE=IMMED |
| D(isplay) | D NET,ID=linename |
| D(isplay)E(very) | D NET,ID=linename,E |

VTAM CLUSTERS

Select option 6 from the VTAM RESOURCES menu to display all physical units, as shown in Figure 42.

```

BMC Software ----- VTAM CLUSTERS ----- AutoOPERATOR
COMMAND ==>                                     TGT ==> CHI CAGO
INTVL==> 1                                       DATE --- 01/03/08
STATUS=> INPUT                                   TIME --- 12: 22: 07
LC CMDS --- (A)ct, (I)nact, (F)orce, (D)isplay, (DE)Display Every
LC  NODENAME MAJNODE ----- TYPE ----- CUA ----- STATUS -----
___ I STPUS I STPUS PU_T4/5 MAJ NODE          ACTI V
___ LNCPV3V LNCPV3V PU_T4/5 MAJ NODE          ACTI V
___ RCTLO29 LNCPV3V -- PHYSI CAL UNI T        ACTI V
___ NCP790V NCP790V PU_T4/5 MAJ NODE          ACTI V
___ A3725V A3725V PU_T4/5 MAJ NODE          ACTI V
___ BS40 BS40 LCL SNA MAJ NODE              ACTI V
___ BS40PU BS40 -- PHYSI CAL UNI T          0F40 ACTI V
___ BS80 BS80 LCL SNA MAJ NODE              ACTI V
___ BS80PU BS80 -- PHYSI CAL UNI T          0F80 ACTI V
___ BSA0 BSA0 LCL SNA MAJ NODE              ACTI V
___ BSA0PU BSA0 -- PHYSI CAL UNI T          0FA0 ACTI V
___ BSA1 BSA1 LCL SNA MAJ NODE              ACTI V
___ BSA1PU BSA1 -- PHYSI CAL UNI T          0FA1 ACTI V
***** END OF VTAM CLSTR *****

```

Figure 42. VTAM CLUSTERS Panel

Use the VTAM CLUSTERS panel to check the status of all communication controllers known to this VTAM. Like the display shown for the D NET,CLSTRS command, the scrollable list shows the cluster names, the owning major nodes, types, and status of the controllers.

Use primary commands to scan the list for a specific controller or display controllers in a particular STATUS. Use line commands to change the status of a NODENAME, just as if you were at the main console.

The fields in this panel are defined here.

| Column | Description | | | | | | | | | | | | |
|--------------------------|---|-----------|-------------|---------------------|--------------------------------|--------------------|-------------------------------|---------------------|--|----------------------|----------------------------------|--------------------------|-----------------------|
| NODENAME | Name given to the controller by the installation system programmer. | | | | | | | | | | | | |
| MAJNODE | Name of the owning VTAM node. | | | | | | | | | | | | |
| TYPE | The node types are defined as: <table> <tr> <th>Node Type</th><th>Description</th></tr> <tr> <td>APPL SEGMENT</td><td>Application program major node</td></tr> <tr> <td>CA MAJ NODE</td><td>Channel-attachment major node</td></tr> <tr> <td>CDRM SEGMENT</td><td>Cross-domain resource manager major node</td></tr> <tr> <td>CDRSC SEGMENT</td><td>Cross-domain resource major node</td></tr> <tr> <td>LCL 3270 MAJ NODE</td><td>Local 3270 major node</td></tr> </table> | Node Type | Description | APPL SEGMENT | Application program major node | CA MAJ NODE | Channel-attachment major node | CDRM SEGMENT | Cross-domain resource manager major node | CDRSC SEGMENT | Cross-domain resource major node | LCL 3270 MAJ NODE | Local 3270 major node |
| Node Type | Description | | | | | | | | | | | | |
| APPL SEGMENT | Application program major node | | | | | | | | | | | | |
| CA MAJ NODE | Channel-attachment major node | | | | | | | | | | | | |
| CDRM SEGMENT | Cross-domain resource manager major node | | | | | | | | | | | | |
| CDRSC SEGMENT | Cross-domain resource major node | | | | | | | | | | | | |
| LCL 3270 MAJ NODE | Local 3270 major node | | | | | | | | | | | | |

| | | |
|---------------|-------------------------|---|
| | LCL SNA MAJ NODE | Channel-attached (local) major node consisting of one or more SNA terminal controllers |
| | PU T4/5 MAJ NODE | Communication controller or a host with an SSCP |
| | SW SNA MAJ NODE | A switched SNA major node |
| CUA | | Hexadecimal channel unit address of the node. |
| STATUS | | Lists the VTAM status abbreviations. Refer to the appendix “Resource Status Codes” in the IBM publication <i>VTAM Messages and Codes</i> for definitions of these status abbreviations. |

Line Commands

Enter the following commands in the LC column next to the resource you want to modify.

| Command | VTAM Equivalent |
|-------------------------|------------------------------------|
| A(ct) | V NET,ACT,ID=nodename |
| I(nact) | V NET,INACT,ID=nodename |
| F(orce) | V NET,INACT,ID=nodename,TYPE=FORCE |
| (i)M(mediate) | V NET,INACT,ID=nodename,TYPE=IMMED |
| D(isplay) | D NET,ID=nodename |
| D(isplay)E(very) | D NET,ID=nodename,E |

VTAM TERMINALS

Select option 7 from the VTAM RESOURCES menu to display all logical units, as shown in Figure 43.

| | | | | | | |
|---|----------|---------|----------------------|------------------|---------------------|--------------------|
| BMC Software ----- | | | VTAM TERMINALS ----- | | AutoOPERATOR | |
| COMMAND ==> | | | | | TGT ==> CHI CAGO | |
| INTVL==> 1 | | | | | DATE --- 01/03/08 | |
| STATUS=> INPUT | | | | | TIME --- 12: 22: 48 | |
| LC CMDS --- (A)ct, (I)nact, (F)orce, (D)isplay, (DE)Display Every | | | | | | |
| LC | UNITNAME | MAJNODE | ----- | TYPE ----- | ATTACH | ----- STATUS ----- |
| ___ | ISTPUS | ISTPUS | | PU_T4/5 MAJ NODE | | ACTIV |
| ___ | LNCPV3V | LNCPV3V | | PU_T4/5 MAJ NODE | | ACTIV |
| ___ | RSLN029 | LNCPV3V | | -LINE | LEASED | ACTIV |
| ___ | RCTL029 | LNCPV3V | | --PHYSICAL UNIT | | ACTIV |
| ___ | RS2900 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2901 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2902 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2903 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2904 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2905 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2906 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2907 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2908 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2909 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2910 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2911 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2912 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |
| ___ | RS2913 | LNCPV3V | | ---LOGICAL UNIT | | ACTIV |

Figure 43. VTAM TERMINALS Panel

Use the VTAM TERMINALS panel to check the status of all terminals known to this VTAM. Like the display shown for the D NET,CLSTRS command, the scrollable list shows the LUNAMES, the owning major nodes, types of units, and the status of the units.

Use primary commands to scan the list for a specific unit or display units in a particular STATUS. Use line commands to change the status of a NODENAME, just as if you were at the main console.

The fields or columns are defined here.

| Column | Description | | | | | | | | | | |
|----------------------|---|-----------|-------------|---------------------|--------------------------------|--------------------|-------------------------------|---------------------|--|----------------------|----------------------------------|
| UNITNAME | Name given to the terminal by the installation system programmer. | | | | | | | | | | |
| MAJNODE | Name of the owning VTAM node. | | | | | | | | | | |
| TYPE | The node types are defined as: <table> <tr> <th>Node Type</th><th>Description</th></tr> <tr> <td>APPL SEGMENT</td><td>Application program major node</td></tr> <tr> <td>CA MAJ NODE</td><td>Channel-attachment major node</td></tr> <tr> <td>CDRM SEGMENT</td><td>Cross-domain resource manager major node</td></tr> <tr> <td>CDRSC SEGMENT</td><td>Cross-domain resource major node</td></tr> </table> | Node Type | Description | APPL SEGMENT | Application program major node | CA MAJ NODE | Channel-attachment major node | CDRM SEGMENT | Cross-domain resource manager major node | CDRSC SEGMENT | Cross-domain resource major node |
| Node Type | Description | | | | | | | | | | |
| APPL SEGMENT | Application program major node | | | | | | | | | | |
| CA MAJ NODE | Channel-attachment major node | | | | | | | | | | |
| CDRM SEGMENT | Cross-domain resource manager major node | | | | | | | | | | |
| CDRSC SEGMENT | Cross-domain resource major node | | | | | | | | | | |

| | | |
|---------------|--------------------------|---|
| | LCL 3270 MAJ NODE | Local 3270 major node |
| | LCL SNA MAJ NODE | Channel-attached (local) major node consisting of one or more SNA cluster controllers |
| | PU T4/5 MAJ NODE | Communication controller or a host with an SSCP |
| | SW SNA MAJ NODE | Switched SNA major node |
| ATTACH | | Indicates the type of line (LEASED or SWITCHED) that connects one node to another or the CUA address. |
| STATUS | | Lists the VTAM status abbreviations. Refer to the appendix “Resource Status Codes” in the IBM publication <i>VTAM Messages and Codes</i> for definitions of these status abbreviations. |

Line Commands

Enter the following commands in the LC column next to the resource you want to modify.

| Command | VTAM Equivalent |
|-------------------------|------------------------------------|
| A(ct) | V NET,ACT,ID=unitname |
| I(nact) | V NET,INACT,ID=unitname |
| F(orce) | V NET,INACT,ID=unitname,TYPE=FORCE |
| (i)M(mediate) | V NET,INACT,ID=unitname,TYPE=IMMED |
| D(isplay) | D NET,ID=unitname |
| D(isplay)E(very) | D NET,ID=unitname,E |

Chapter 7. OPERATOR REQUESTS Application

The OPERATOR REQUESTS application reports on mounts pending, outstanding “mount requests” replies, and messages that indicate operator intervention. All items that request operator involvement are gathered on one screen. As the mounts or replies are satisfied, the messages are deleted.

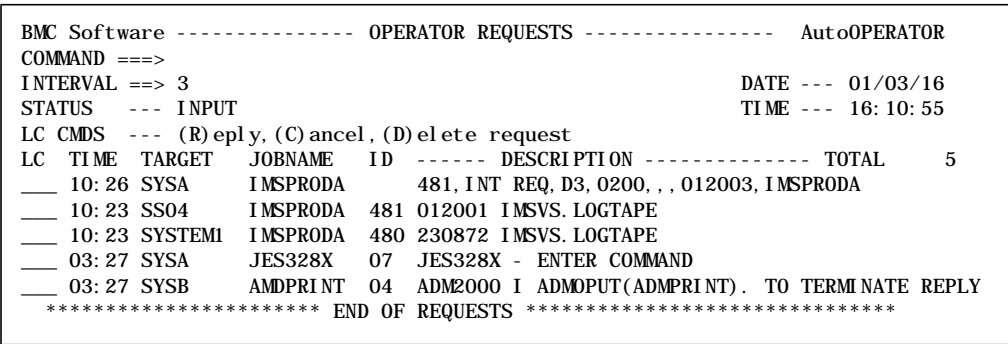


Figure 44. OPERATOR REQUESTS Panel

Operator Request Messages

The data display area shows only those messages that require or request operator action. These messages differ from the alerts generated by EXECs, and are of three basic types: outstanding replies, mount requests, and action messages.

To respond to outstanding replies, use the line command R to select them. When you enter R next to the message, a new panel appears with the information pertaining to that specific request; see Figure 45. Enter the answer in the REPLY field. Press END to return to the list without a reply.

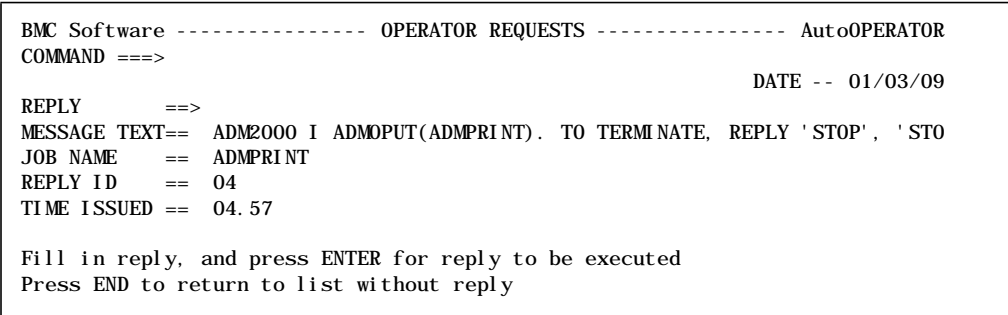


Figure 45. OPERATOR REQUESTS Reply Panel

Mount requests are displayed for both tape drives and DASD. The messages disappear when the request is satisfied.

A message that requires intervention or other action is displayed in its original format. It disappears when the component that issued it deletes it with a Delete Operator Message (DOM) command.

The following list describes the fields for the OPERATOR REQUESTS reply panel.

| | |
|---------------------|---|
| REPLY | Text expected to be received by the outstanding reply |
| MESSAGE TEXT | Message that was presented to the operator |
| JOB NAME | Name of the task that issued the WTOR |
| REPLY ID | ID assigned by the operating system that the reply text will be issued to |
| TIME ISSUED | Time the WTOR was issued |

Primary Commands

Enter primary commands in the COMMAND field, including the following commands for the OPERATOR REQUESTS application.

| Command | Description |
|----------------|---|
| ALL | Display all mounts, replies, and action messages |
| GO | Start Auto-refresh of the OPERATOR REQUESTS application |
| MESSAGE | Display only action messages |
| MOUNTS | Display only mount messages |
| PROFILE | Access OPERATOR REQUESTS PROFILE PANEL |
| REPLIES | Display only messages requesting replies |

Line Commands

Enter the following line commands in the column labeled LC.

| Command | Description |
|----------------|-----------------------------|
| CAN | Cancel the job |
| D | Delete message from display |
| R | Reply to the message |

OPERATOR REQUEST PROFILE Panel

Access the OPERATOR REQUEST PROFILE panel by entering PROFILE in the COMMAND field of the OPERATOR REQUESTS panel.

BMC Software

OPERATOR REQUESTS PROFILE

AutoOPERATOR

COMMAND ==>

AUTOCMD

==> ALL

Sort

==> A

All, Mounts, Replies, Mess

(A) scendi ng, (D) escendi ng

After

Color

THRESHOLDS

==> (Mi n)

==> (Mi n)

1 to 999 minutes highlight with

YELLOW, RED, GREEN, BLUE, WHITE

TARGETS

(Enter Target Names)

==> CHI CAGO

==> LONDON

==>

==>

==>

==>

==>

==>

(Enter Device Range Specifications)

FROM ==>

TO ==>

==>

==>

==>

==>

==>

==>

Enter END to save changes, CANCEL to cancel

Figure 46. OPERATOR REQUESTS PROFILE Panel

The OPERATOR REQUESTS PROFILE panel has four areas. The first area defines which commands will be automatically executed when the OPERATOR REQUESTS application is entered. If Mounts is specified for AUTOCMD, then only MOUNTS messages are displayed when you enter the application.

The second area sets the threshold levels for aging requests that determine the color the request is displayed in.

The third area determines which target systems are to be monitored by the OPERATOR REQUESTS application. You can specify up to eight targets.

The fourth area defines ranges of tape drive addresses that allows you to show only those mount messages for the specified ranges.

Field Descriptions

The following list describes the fields on the OPERATOR REQUESTS PROFILE panel:

| Field | Description |
|-------------------|---|
| SORT | This field determines whether the sort is in ascending or descending order |
| THRESHOLDS | These fields indicate the time period after which a message will change color and the color that a message will turn to |
| TARGETS | The MAINVIEW AutoOPERATOR target names from which data about operator messages, mounts, and replies are gathered |
| FROM, TO | The device range specifications for the mount requests |

AUTOCMD Commands

Enter the following commands in the AUTOCMD field of the OPERATOR REQUESTS PROFILE panel.

| Command | Description |
|-----------------|---|
| All | Displays all operator requests |
| Mounts | Displays only mount message “Mounts command” s |
| Replies | Displays only WTOR “Replies command” s “WTOR” |
| Messages | Displays all requests except mounts and replies |

Chapter 8. ENQUEUE/RESERVE Application

The ENQUEUE/RESERVE application displays enqueues and reserves in any of several situations. In the default Conflicts Mode, the application lists all active reserves and the enqueues for which users are waiting. In Reserves Mode, only reserves are displayed.

| | | | | | | | | | |
|---|----------|------|---------|-------|-----------|---------------------|----------------------|-------|---|
| BMC Software ----- ENQUEUE/RESERVE ----- AutoOPERATOR | | | | | | | | | |
| COMMAND ==> | | | | | | TGT ==> SYSA | | | |
| INTERVAL ==> 3 | | | | | | DATE --- 01/03/16 | | | |
| STATUS --- INPUT | | | | | | TIME --- 16: 11: 05 | | | |
| LC CMDS --- (CAN) cel | | | | | | | | | |
| LC | JOBNAME | ASID | - TYPE- | STAT- | -- GRSID- | - MAJOR-- | MI NOR----- | TOTAL | 4 |
| --- | CWBSS | 184 | EXCL | HOLD | SYSB | SYSDSN | MVS. CB1X. IMFJRN L2 | | |
| --- | CWB1RDR | 45 | SHR | HOLD | SYSB | SYSDSN | MVS. CB1X. IMFJRN L2 | | |
| --- | NETAVAIL | 201 | EXCL | HOLD | SYSB | NETAVAIL | SHADOWCB | | |
| --- | NETALERT | 209 | EXCL | WAIT | SYSB | NETAVAIL | SHADOWCB | | |
| ***** END OF ENQUEUES/RESERVES ***** | | | | | | | | | |

Figure 47. ENQUEUE/RESERVE Panel

The data display area lists any requested enqueues and reserves. There are commands to change modes and select enqueue data.

Field Descriptions

The columns in the ENQUEUE/RESERVE panel are defined as:

| Column | Description |
|----------------|--|
| JOBNAME | The name of the job, started task, or TSO user ID holding/requesting the enqueue or reserve. |
| ASID | The address space identifier of the job, started task, or TSO user ID holding/requesting the enqueue or reserve. |
| TYPE | SHARED or EXCLUSIVE. |
| STAT | HOLDS or WAITING. |
| GRSID | System ID of the requestor as extracted from the RIBESYSN field. |
| MAJOR | QNAME of the resource. |
| MINOR | RNAME name of the resource. If data contains unprintable characters, each string of hex data is shown preceded by x. |
| TOTAL | Reserves or Enqueues total. |

Primary Commands

You can enter primary commands in the COMMAND field, including the following ENQUEUE/RESERVE primary commands.

| Command | Description |
|--------------------------|---|
| CONFLICT | Return to the default ENQUEUE/RESERVE display showing enqueue conflicts and all outstanding reserves. |
| DSN string | Display SYSDSN enqueues for the qualifier string. The string can include generic (*) characters. |
| ENQUEUEES | Display only non-RESERVE enqueues. |
| GO | Start auto-refresh of the ENQUEUEES application. |
| JOB | Display all enqueues for the specified job name. |
| USER | Display all enqueues for a specified TSO user ID. |
| MAJOR majorname | Display enqueues for the specified major queue name only. |
| RESERVES | Display only RESERVE enqueues. |
| SPFEDIT string | Display SPFEDIT enqueues for the qualifier string. The string can include generic (*) characters. |
| SPFMEM membername | Display SPFEDIT enqueues for the specified member-name string. The string can include generic (*) characters. |

Line Commands

You can enter the following line command in the column labeled LC.

| Command | Description |
|------------|--|
| CAN | Issue the CANCEL command for the job name. |

Chapter 9. ADDRESS SPACES Application

The ADDRESS SPACES application provides information on jobs, started tasks, and TSO users in the target system specified. There are two panels: the ADDRESS SPACES panel and the ADDRESS SPACES PROFILE panel, used to set the display and threshold levels for the alarms.

The ADDRESS SPACES panel is 132 positions wide. Press PF11/23 to view the right side of the monitoring criteria. Press PF10/22 to return to the first 80 positions.

| | | | | | | | | | |
|--|----------|----------|----------|------|-----|---------|----------|------|------|
| BMC Software ----- ADDRESS SPACES ----- AutoOPERATOR | | | | | | | | | |
| COMMAND ==> | | | | | | | | | |
| TGT ==> SYSB | | | | | | | | | |
| INTERVAL ==> 3 | INITS | JOB | STCS | TSUS | CPU | DATE -- | 01/03/16 | | |
| STATUS --- INPUT | 9 | 1 | 37 | 43 | 27 | TIME -- | 16:11:15 | | |
| LC | JOBNAME | STEPNAME | PROCSTEP | TYPE | C | JNUM | POS | ASID | REAL |
| --- | *MASTER* | | | STC | | 96 | N/S | 1 | 324K |
| --- | PCAUTH | PCAUTH | | STC | | | N/S | 2 | 84K |
| --- | TRACE | TRACE | | STC | | | N/S | 3 | 92K |
| --- | DUMPSRV | DUMPSRV | DUMPSRV | STC | | | OUT | 5 | 168K |
| --- | CONSOLE | CONSOLE | | STC | | | N/S | 6 | 92K |
| --- | ALLOCAS | ALLOCAS | | STC | | | N/S | 8 | 96K |
| --- | MI CE | MI CE | XMSV | STC | | 238 | N/S | 12 | 60K |
| --- | M/VS | M/VS | STEPNAME | STC | | 99 | N/S | 13 | 520K |
| --- | SMF | SMF | IEFPROF | STC | | | N/S | 14 | 144K |
| ***** END OF DISPLAY ACTIVE ***** | | | | | | | | | |

Figure 48. ADDRESS SPACES Panel, Left Side

| | | | | | | | | | |
|--|----------|------|--------|------|------|---------|----------|-----|----|
| BMC Software ----- ADDRESS SPACES ----- AutoOPERATOR | | | | | | | | | |
| COMMAND ==> | | | | | | | | | |
| TGT ==> SYSB | | | | | | | | | |
| INTERVAL ==> 3 | INITS | JOB | STCS | TSUS | CPU | DATE -- | 01/03/16 | | |
| STATUS --- INPUT | 9 | 1 | 37 | 43 | 27 | TIME -- | 16:11:15 | | |
| LC | JOBNAME | REAL | PAGING | SIO | CPU% | DP | PGN | DMN | SR |
| --- | *MASTER* | 324K | .00 | .04 | .21 | FF | 0 | | |
| --- | PCAUTH | 84K | .00 | .00 | .32 | EF | 2 | | |
| --- | TRACE | 92K | .00 | .00 | .54 | EF | 14 | LW | |
| --- | DUMPSRV | 168K | .00 | .00 | .34 | EF | 0 | | |
| --- | CONSOLE | 92K | .00 | .57 | .67 | FF | 14 | | |
| --- | ALLOCAS | 96K | .00 | .00 | .43 | FF | | | |
| --- | MI CE | 60K | .00 | .00 | .20 | FF | 14 | | |
| --- | M/VS | 520K | .00 | .00 | .11 | EF | 14 | | |
| --- | SMF | 144K | .00 | .00 | .11 | EF | 14 | | |
| ***** END OF DISPLAY ACTIVE ***** | | | | | | | | | |

Figure 49. ADDRESS SPACES Panel, Right Side

ADDRESS SPACES Panel

The data display area is a scrollable table listing data about any or all types of address spaces, batch jobs, started tasks, and TSO users. You can scroll the table both vertically and horizontally.

You can enter primary commands to display address spaces by type, such as OSTC, or to sort them on any output field on the panel, such as JOBNAME or CPU TIME.

The first time the application is used during any terminal session, the address spaces are sorted by ASID. To sort the data on another field, use the SORT primary command. You can sort in ascending or descending order:

```
COMMAND ===>SORT fi el dname A
COMMAND ===>SORT fi el dname D
```

The data is sorted according to your last SORT command each time you press ENTER. To return to sort order by ASID, enter SORT with no operands.

Issue line commands to affect the operation of a listed address space, whether a job, TSO user, or started task. The commands are executed just as if they had been issued at the operator's main console. Line commands are shown in "Line Commands" on page 113.

Lastly, you can issue line commands to select specific results for any job name. The output from these commands is available on the Journal Log Display. To display the results, press PF5/17. Selected result line commands are shown in "AUTOCMD Commands" on page 115.

Note: When you enter the ADDRESS SPACES application for the first time, the ADDRESS SPACES PROFILE panel is displayed. If you press the END key, a profile member named MVSACT00 is saved before you return to the ADDRESS SPACES panel. All future invocations of this application recognize that the profile member is available and you will enter the ADDRESS SPACES panel directly.

Field Descriptions

The fields and column heading for the ADDRESS SPACES panel are described below. The panel is 132 positions wide; press PF11/23 and PF10/22 to switch between the right and left views of the panel.

| Column | Description |
|-----------------|---|
| JOBNAME | The name of the job, started task, or TSO user ID. Derived from ASCB. |
| STEPNAME | For a job, the name of a job step. For a started task, the name to modify. For a TSO user, the name of the LOGON PROC. Derived from TIOT. |
| PROCSTEP | For a job, the name of a PROC step. For a started task, nothing. For a TSO user, the terminal ID. Derived from TIOT. |
| TYPE | The specific type of address space. Either JOB, STC, or TSO. Derived from ASCB. |

| | |
|-----------------|---|
| C | JOBCLASS for batch jobs. Derived from JES2 (requires the optional JES2MAO module). |
| POS | Position of address space: IN, OUT, N/S, or <-> (Transitioning). Derived from ASCB and OUCB. |
| ASID | Address space ID of this address space, in decimal. Derived from ASCB and ASID. |
| DP | Dispatching priority. Derived from ASCBDP. |
| DMN | Domain (period). Derived from OUCBDMN. |
| SR | Swap reason code. Derived from OUCBSRC. |
| JNUM | When available, this is the JES job number for the entity. Derived from JES2 or JES3. |
| REAL | The amount of real storage currently in use by the address space. Derived from ASCBFMCT. |
| PAGING | Total paging rate for the address space, in pages/second. Derived from OUXBPIN, OUXBPOUT, and OUXBCAPI. |
| SIO | Total I/O rate for the address space, in IOs/second. Derived from ASCBIOSC. |
| CPU | Percentage of CPU currently in use by the address space. Derived from ASCBEJST and ASCBSRBT. |
| SIO CNT | Total number of I/Os completed by the address space since the last step change. Derived from ASCBIOSC. |
| PGN | The Performance Group number for the address space. Derived from OUCBNPG. |
| EXCP-CNT | Number of I/O operations done by this job step. Execute Channel Program count. Derived from ASCB10SC. |
| CPU TIME | Total amount of CPU time consumed by the address space since the last step change, in seconds. Derived from ASCB. |

Primary Commands

Enter primary commands in the COMMAND field, including the following commands for the ADDRESS SPACES application.

| Command | Description |
|---------------------------|--|
| ALL | Redisplay all of the address spaces after a JOB, STC or TSU command has been issued |
| GO | Start auto-refresh of the ADDRESS SPACE panel |
| OJOB or JOB | Display only jobs |
| OSTC or STC | Display only started tasks |
| OTSU or TSU | Display only TSO users |
| SORT fieldname A D | Sort data on the specified field (column), in either A scending or D escending order |
| x on off | Display only those address spaces that have exceeded any thresholds or all address spaces |

Resource Exception Command

When a resource application is selected, the application displays the status of all the resources, including those that are not operating normally (exceptions). You can enter a resource exception command, X {ON|OFF}, to display only the resource exceptions or to display all the resources on any resource application. The default is X OFF, which displays all the resources defined to the target for that application.

For example,

```
COMMAND ==> X ON
```

entered from the ADDRESS SPACE application causes the application to display only those address spaces that have exceeded any thresholds as defined in the ADDRESS SPACES PROFILE.

Line Commands

You can enter the following line commands in the column labeled LC.

| Command | Description |
|------------|---|
| nn | Issue the MVS command RESET jobname,PERFORM=nnn against the job. The range for nnn is 1 to 999. |
| CAN | Issue the MVS CANCEL command for the job name. |
| FOR | Issue the MVS FORCE command for the job name. |
| PJ | Issue the JES \$PJnnn command for the job. |

ADDRESS SPACES PROFILE Panel

Access the ADDRESS SPACES PROFILE panel by entering PROFILE in the COMMAND field of the ADDRESS SPACES panel.

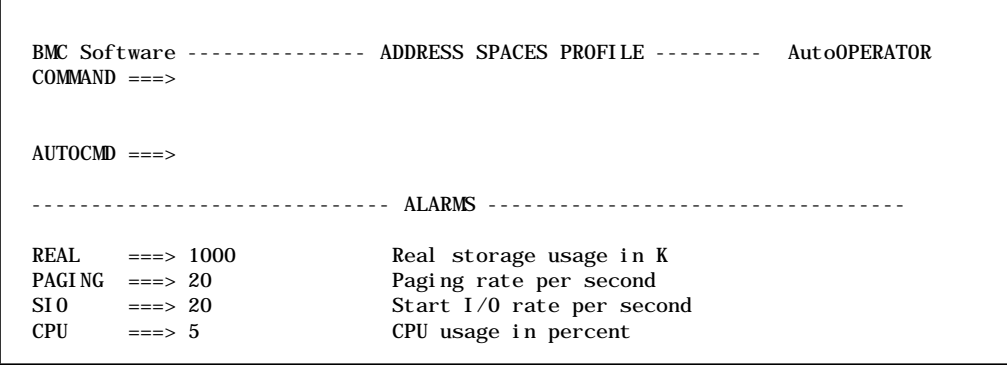


Figure 50. ADDRESS SPACES PROFILE Panel

The ADDRESS SPACES PROFILE panel has two areas. The first area defines which commands will be automatically executed when the ADDRESS SPACES application is entered. If AUTOCMD ====> JOB is specified, then only jobs are displayed when entering the application. See “AUTOCMD Commands” on page 115.

The second area sets the threshold levels for alarms to be highlighted on the ADDRESS SPACES panel. Either fill in the threshold level needed to set alarms or set the level high enough so that alarms are ignored.

Field Descriptions

The following list describes the fields for the ADDRESS SPACES PROFILE Panel:

| Field | Description |
|--------|--|
| REAL | Amount of real storage in thousands of bytes |
| PAGING | Paging rate per second |
| SIO | Number of started subchannel instructions issued |
| CPU | CPU usage in percent |

AUTOCMD Commands

You can enter the following commands in the AUTOCMD field of the ADDRESS SPACES PROFILE panel.

| Command | Description |
|---------------------------|--|
| SORT fieldname A D | Sort data on the specified field (column), in either A scending or D escending order |
| GO | Start auto-refresh of the ADDRESS SPACE panel |
| JOB | Display only jobs |
| STC | Display only started tasks |
| TSU | Display only TSO users |

SYSPROG Line Commands

Following is a list of SYSPROG line commands:

| | |
|------------|---|
| TIO | Name of the volume allocation by DD name |
| MON | Monitors a job for 30 seconds |
| PRO | Displays current maximum virtual storage usage and step and CPU limitations information |
| STA | Displays current job status |
| SRM | Shows SRM data for a job |

Chapter 10. TAPE STATUS/CONTROL Application

The TAPE STATUS/CONTROL application reports the status of tape drives on the specified target system, and allows the operator to issue commands to modify that status.

| | | | | | | | | | | | |
|--|-----|--------|------|---------------------------|-----------------------|--------------------|--|-------------------|--|--|--|
| BMC Software ----- | | | | TAPE STATUS/CONTROL ----- | | | | AutoOPERATOR | | | |
| COMMAND ==> | | | | | | | | TGT ==> SYSB | | | |
| INTERVAL ==> 3 | | | | | | | | DATE --- 01/03/16 | | | |
| STATUS --- INPUT | | | | | | | | TIME --- 10:34:00 | | | |
| LC CMDS --- (ON)line, (OF)fl ine, (UNL)oad | | | | | | | | | | | |
| LC | CUA | VOLUME | TYPE | JOBNAME | VOLSTATE | ----- STATUS ----- | | | | | |
| ___ | 480 | | 3400 | CWB1TAPE | /REMOV ONLINE | | | | | | |
| ___ | 481 | | 3400 | CWB2TAPE | /REMOV ONLINE | | | | | | |
| ___ | 482 | 34055 | 3400 | CIABKUP | PRI V/RESVD ALLOCATED | | | | | | |
| ___ | 483 | 20056 | 3400 | QA2BOMT | PRI V/RESVD ALLOCATED | | | | | | |
| ___ | 484 | | 3400 | CMF16 | /REMOV ONLINE | | | | | | |
| ___ | 485 | | 3400 | CMF24 | /REMOV ONLINE | | | | | | |
| ___ | 486 | 02003 | 3400 | DLYDCS | PRI V/RESVD ALLOCATED | | | | | | |
| ___ | 487 | 100304 | 3400 | CWB1PRNT | PRI V/RESVD ALLOCATED | | | | | | |
| ___ | 488 | 34579 | 3400 | TCC2A | PRI V/RESVD ALLOCATED | | | | | | |
| ___ | 489 | 37803 | 3400 | TW24AB | PRI V/RESVD ALLOCATED | | | | | | |
| ___ | 48A | | 3400 | | /REMOV OFFLINE | NOT RDY | | | | | |
| ___ | 48B | | 3400 | | /REMOV OFFLINE | NOT RDY | | | | | |
| ___ | 48C | | 3400 | | /REMOV OFFLINE | NOT RDY | | | | | |
| ___ | 48D | | 3400 | | /REMOV OFFLINE | NOT RDY | | | | | |
| ___ | 48E | | 3400 | | /REMOV OFFLINE | NOT RDY | | | | | |
| ___ | 48F | | 3400 | | /REMOV OFFLINE | NOT RDY | | | | | |
| ___ | 490 | | 3400 | | /REMOV OFFLINE | NOT RDY | | | | | |
| ___ | 491 | | 3400 | CWBTPBKP | PRI V/RESVD ALLOCATED | CHG STAT | | DDR PNDG | | | |

Figure 51. TAPE STATUS/CONTROL Panel

The data display area shows tape drives and their status. The information is similar to the output of the MVS Display Unit command. Here, the information is in a scrollable list from which you can select devices with the desired characteristics, using simple commands. Device status is shown in three columns.

You can use line commands to alter device status just as if they had been issued at the operator's main console. There are two types of line commands: MAINVIEW AutoOPERATOR and SYSPROG line commands.

Dynamic UCBs: This application handles device addresses that have been dynamically configured into the system. This application also recognizes when a dynamic I/O configuration change has taken place and displays the new configuration the next time you press ENTER or the PF7/8 keys.

Note: If a command is issued against a device in the list while an I/O configuration change is occurring, the command will be rejected and a message appears in the short message field in the upper right-hand corner. This application also recognizes when a dynamic I/O configuration change has taken place and displays the new configuration the next time you press ENTER or the PF7/8 keys.

To reduce the overhead, the TAPE STATUS/CONTROL application does not PIN the UCBs it displays. Therefore, if you use this application during dynamic reconfiguration processing, you might receive an OC4 abend. This is a very rare occurrence and does not merit using the overhead required to circumvent the situation.

Field Descriptions

The columns in the TAPE STATUS/CONTROL panel are defined below. The source fields in the MVS control blocks that supply the data are listed for each item.

| Column | Description |
|----------|--|
| CUA | Channel Unit Address (device address) of the tape drive. Derived from UCBNAME. |
| VOLUME | VOLSER of the volume mounted on the tape drive. Derived from UCBVOLI. |
| TYPE | Type of tape drive, usually 3400 or 3480. Derived from UCBTYP. |
| JOBNAME | Job currently being processed. Derived from UCBFSEQ. |
| VOLSTATE | Mount attributes and other characteristics of the tape drive. Derived from UCBSTAB. |
| STATUS | Three columns showing drive's overall status. The first column shows long-term status, indicated by ONLINE, OFFLINE, or ALLOCATED. The second column shows short-term status, indicated by BUSY, NOT RDY (not ready), or CHG STAT (changing status). The third column shows immediate status crucial to operations, indicated by DDR PNDG (dynamic device reconfiguration pending). Derived from UCBFLA. |

Primary Commands

Enter primary commands in the COMMAND field, including the following commands for the TAPE STATUS/CONTROL application.

| Command | Description |
|------------|--|
| ALLOC | Display only allocated devices |
| GO | Start auto-refresh of the TAPE STATUS/CONTROL application |
| F(ind) cua | Finds the listed device with this Control Unit Address if it is a complete address. If not, finds the first CUA in the list that starts with this string (1 or more characters). |
| OFFLINE | Display only offline devices |
| ONLINE | Display only online devices |

| | |
|-------------------------|---|
| S(how)V(ol) mask | Display all VOLSERs that fit mask, a pattern mask of 1 to 6 characters that includes generic (*) or wild- card (+) characters. An * represents any number of consecutive characters (STR* shows all tape VOLSERs starting with STR). A + represents one character (+++010 shows VOLSERs ending in 010). |
| V(olume) volser | Locate the listed volume that has this VOLSER if it is a complete VOLSER. If not, locate the first VOLSER in the list that starts with this 1- to 6-character string. |

Line Commands

Enter the following line commands in the column labeled LC.

| Command | Description |
|----------------|--|
| OF | Issues the command VARY cua,OFFLINE to place the device in OFFLINE status |
| ON | Issues the command VARY cua,ONLINE to place the device in ONLINE status |
| UNL | Issues the command UNLOAD cua to remove the current volume from the device |

SYSPROG Line Commands

Enter the following SYSPROG commands in the column labeled LC.

| Command | Description |
|----------------|--|
| IO | Displays all outstanding non-TP I/O |
| USI | Displays active jobs using a specified device |
| UCB | Displays a UCB in hexadecimal and character modes. Available only if the SYSPROG product is installed. |

The SYSPROG line commands are also described in the online tutorials. To access the tutorials, press the HELP key (PF1/13) in the TAPE STATUS/CONTROL application.

Chapter 11. DASD STATUS/CONTROL Application

The DASD STATUS/CONTROL application reports the status of Direct Access Storage Devices (DASD) in the target system specified, and allows the operator to modify the status.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----|--------|------|--|--|-------|-------------|--|-----------|---------------------------|--|--|--|--|---------------------|--------|--|----------|--|--------------|--|--|--|--|--|--|--|--|--|
| BMC Software ----- | | | | | | | | | | DASD STATUS/CONTROL ----- | | | | | | | | | | AutoOPERATOR | | | | | | | | | |
| COMMAND ==> | | | | | | | | | | | | | | | TGT ==> SYSA | | | | | | | | | | | | | | |
| INTERVAL ==> 3 | | | | | | | | | | | | | | | DATE --- 01/03/16 | | | | | | | | | | | | | | |
| STATUS --- INPUT | | | | | | | | | | | | | | | TIME --- 10: 34: 05 | | | | | | | | | | | | | | |
| LC CMDS --- (ON)line, (OF)fline, (UNL)oad | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LC | CUA | VOLUME | TYPE | | | USERS | VOLSTATE | | ----- | | | | | | | STATUS | | ----- | | | | | | | | | | | |
| --- | 240 | CMF001 | 3380 | | | 37 | PRI V/RSDNT | | ALLOCATED | | | | | | | BUSY | | RESERVED | | | | | | | | | | | |
| --- | 241 | IMF007 | 3380 | | | 10 | PRI V/RSDNT | | ALLOCATED | | | | | | | BUSY | | | | | | | | | | | | | |
| --- | 242 | PMG006 | 3380 | | | 47 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | DDR PNDG | | | | | | | | | | | |
| --- | 243 | TSG001 | 3380 | | | 77 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 248 | MSC001 | 3380 | | | 0 | PRI V/RSDNT | | ONLINE | | | | | | | | | | | | | | | | | | | | |
| --- | 249 | PMG005 | 3380 | | | 8 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 24A | DAV001 | 3380 | | | 13 | PRI V/RSDNT | | ALLOCATED | | | | | | | BUSY | | | | | | | | | | | | | |
| --- | 24B | PMG004 | 3380 | | | 3 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 250 | IMF006 | 3380 | | | 51 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 251 | CMF002 | 3380 | | | 29 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 252 | DAV002 | 3380 | | | 49 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 253 | SYSMCA | 3380 | | | 5 | PRI V/RSDNT | | ALLOCATED | | | | | | | BUSY | | | | | | | | | | | | | |
| --- | 254 | IMF004 | 3380 | | | 36 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 255 | SYSP1A | 3380 | | | 6 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 258 | CMF004 | 3380 | | | 10 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 259 | CMF003 | 3380 | | | 3 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 25A | IMF005 | 3380 | | | 30 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| --- | 25B | IMF013 | 3380 | | | 0 | PRI V/RSDNT | | ALLOCATED | | | | | | | | | | | | | | | | | | | | |
| ***** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| END OF DASD DEVICE ***** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Figure 52. DASD STATUS/CONTROL Panel

The data display area lists DASD devices showing volume and status information. This information is similar to the output of the MVS Display Unit command. Here, the information is in a scrollable list from which you can select devices with desired characteristics, using simple commands.

Device status is shown in a three-part column. You can issue line commands to alter device status. These commands are executed just as if they had been issued at the operator's main console.

Dynamic UCBs: This application handles device addresses that have been dynamically configured into the system. This application also recognizes when a dynamic I/O configuration change has taken place and displays the new configuration the next time you press ENTER or the PF7/8 keys.

Note: If a command is issued against a device in the list while an I/O configuration change is occurring, the command will be rejected and a message appears in the short message field in the upper right-hand corner. This application also recognizes when a dynamic I/O configuration change has taken place and displays the new configuration the next time you press ENTER or the PF7/8 keys.

To reduce the overhead, the DASD STATUS/CONTROL application does not PIN the UCBs it displays. Therefore, if you use this application during dynamic reconfiguration processing, you might receive an OC4 abend. This is a very rare occurrence and does not merit using the overhead required to circumvent the situation.

Field Descriptions

The fields for the DASD STATUS/CONTROL panel are defined below, listing the source fields in the MVS control fields for the data.

| Column | Description |
|----------|--|
| CUA | Control Unit Address (device address) of the DASD. Derived from UCBNAME. |
| VOLUME | VOLSER of the volume mounted on the DASD. Derived from UCBVOLI. |
| TYPE | Type of DASD. Derived from UCBTYP. |
| USERS | Number of currently allocated DD statements. Derived from UCBFSEQ. |
| VOLSTATE | Mount attributes and other characteristics of the DASD. Derived from UCBSTAB. |
| STATUS | Three columns showing the drive's overall status. First column indicates long-term status with these terms: ONLINE OFFLINE ALLOCATED SYSRES CONSOLE Second column indicates short-term status with these terms: BUSY NOT RDY (not ready) CHG STAT (changing status) UNLD PND (unload pending) C/P SUSP (channel program suspended) Third column indicates immediate status crucial to operations with these terms: RESERVED RES PNDG (reserve pending) DDR PNDG (dynamic device reconfiguration pending) MNT PNDG (mount pending) Derived from UCBFLA. |

Primary Commands

Enter primary commands in the COMMAND field, including the following commands for the DASD STATUS/CONTROL application.

| Command | Description |
|-------------------------|--|
| ALLOC | Display only allocated devices. |
| GO | Start auto-refresh of the DASD application. |
| F(ind) cua | Finds the listed device that has this Control Unit Address if it is a complete address. If not, finds the first CUA in the list that starts with this string (1 or more characters). |
| OFFLINE | Display only offline devices. |
| ONLINE | Display only online devices. |
| O(only)P(age) | Display only current paging volumes. |
| PRIVATE | Display only devices with PRIVATE attributes. |
| PUBLIC | Display only devices with PUBLIC attributes. |
| S(how)V(ol) mask | Display all VOLSERs that fit mask, a pattern mask of 1 to 6 characters that includes generic (*) or wildcard (+) characters. An * represents any number of consecutive characters (STR* shows all VOLSERs starting with STR). A + represents one character (+++010 shows VOLSERs ending in 010). |
| STORAGE | Display only devices with STORAGE attributes. |
| V(olume) volser | Locate the listed volume that has this VOLSER, if it is a complete VOLSER. If not, locate the first VOLSER in the list that starts with this string (1 to 6 characters). |

Line Commands

Enter the following line commands in the column labeled LC.

| Command | Description |
|------------|---|
| OF | Issue the command VARY cua,OFFLINE to place the device in OFFLINE status |
| ON | Issue the command VARY cua,ONLINE to place the device in ONLINE status |
| MPR | Mount a device PRIVATE for an online device only |
| MPU | Mount a device PUBLIC for an online device only |
| MST | Mount a device STORAGE for an online device only |
| UNL | Issue the command UNLOAD cua to remove the current volume from the device |

SYSPROG Line Commands

Enter the following SYSPROG commands in the column labeled LC.

| Command | Description |
|------------|--|
| IO | Displays all outstanding non-TP I/O. |
| SPA | Displays disk space by UCB, volume serial, and generic name. Available only if the SYSPROG product is installed. |
| USI | Displays active jobs using a specified device. |
| UCB | Displays a UCB in hexadecimal and character modes. Available only if the SYSPROG product is installed. |

The SYSPROG line commands are also described in the online tutorials. To access the tutorials, press the HELP key (PF1/13) in the DASD STATUS/CONTROL application.

Chapter 12. Using Basic SYSPROG Services from MAINVIEW AutoOPERATOR

This section documents the basic SYSPROG services (previously called RESOLVE services) that you can access from MAINVIEW AutoOPERATOR when the AutoOPERATOR for OS/390 option is installed. Topics covered are:

- SYSPROG services primary commands
- List of SYSPROG services distributed with AutoOPERATOR
- SYSPROG services syntax
- SYSPROG services message format
- SYSPROG services security

For complete syntax and examples of resulting output, refer to the *MAINVIEW SYSPROG Services User Guide and Reference* manual.

SYSPROG Services Primary Commands

The basic SYSPROG services provide a real-time picture of current MVS operational events in the Journal and provide an online system management tool to:

- Display overall systems performance
- Detect potential performance problems
- Record SYSPROG service information using logging facilities
- Modify parameters of selection criteria

You can enter SYSPROG commands in the COMMAND field of any MAINVIEW AutoOPERATOR application panels. To invoke a SYSPROG service, precede each command with a question mark; for example:

```
COMMAND ====> ?ASM, MAP
```

where:

| | |
|------------|--|
| ? | Is the command prefix required to invoke a SYSPROG service from an MAINVIEW AutoOPERATOR application |
| ASM | Is the SYSPROG services that displays auxiliary storage and page data set information |
| MAP | Is the SYSPROG service that displays additional auxiliary storage information per address space |

The results of the SYSPROG command appear in the local BBI-SS PAS Journal (BBIJRNL). In this example, the ASM, MAP command appears in the local BBI-SS PAS Journal with a display of the corresponding auxiliary storage and page data set information. The cursor is

positioned under the command that was entered in the Journal display. You can scroll through this display, but you cannot issue commands.

Figure 53 on page 126 shows an example of the SYSPROG command output sent to a user's local BBI-SS PAS Journal and displayed by the General Service LOG DISPLAY.

```

BMC Software ----- LOG DISPLAY ----- GENERAL SERVICES
COMMAND ==>                                     TGT ==> LOCAL
LINE=      69 LOG= #1 STATUS INPUT    TIME 18:02:30 INTV==> 1
18:01:18 %SWATCH      JES2
18:01:23 %STS0CPU     TS0CPU-
18:01:42  ASM,MAP
18:01:44 AMTA5CI LAST IPL WAS COLD START (CLPA)
18:01:44 AMTA51I ASMT 00FDB8E8
18:01:44 AMTA52I TOTAL LOCAL SLOTS 95100 AVAILABLE 63867 = 67%
18:01:44 AMTA5DI LARGEST HOLDER OF SLOTS IS CIM4X WITH 2%
18:01:44 AMTA53I D/S 0 (847 PRV032) PLPA SIZE 4500 FREE 2346 = 52% BURST
18:01:44 AMTA53I D/S 1 (46E PRV031) COMM SIZE 3900 FREE 2772 = 71% BURST
18:01:44 AMTA56I D/S 2 (NOT IN USE) DUPLX
18:01:44 AMTA53I D/S 3 (860 SYSP1B) LOCAL SIZE 45000 FREE 33058 = 73% BURST
18:01:44 AMTA53I D/S 4 (863 SYSP3B) LOCAL SIZE 30000 FREE 18947 = 63% BURST
18:01:44 AMTA53I D/S 5 (A40 SYSP2B) LOCAL SIZE 10050 FREE 5442 = 54% BURST
18:01:44 AMTA53I D/S 6 (A41 SYSP4B) LOCAL SIZE 10050 FREE 5380 = 54% BURST
18:01:44 AMTA56I D/S 7 (NOT IN USE) UNKN
18:01:45 AMTA54I *MASTER* OWNS 0 VIO 51 NON-VIO SLOTS
18:01:45 AMTA54I PCAUTH OWNS 0 VIO 15 NON-VIO SLOTS
18:01:45 AMTA54I TRACE OWNS 0 VIO 8 NON-VIO SLOTS
18:01:45 AMTA54I GRS OWNS 0 VIO 149 NON-VIO SLOTS
18:01:45 AMTA54I DUMPSRV OWNS 0 VIO 75 NON-VIO SLOTS
18:01:46 AMTA54I CONSOLE OWNS 0 VIO 162 NON-VIO SLOTS
18:01:46 AMTA54I ALLOCAS OWNS 0 VIO 50 NON-VIO SLOTS
18:01:46 AMTA54I LLA OWNS 0 VIO 162 NON-VIO SLOTS
18:01:46 AMTA54I INIT OWNS 0 VIO 44 NON-VIO SLOTS
***** END OF LOG *****

```

Figure 53. Local Journal Log Displayed in LOG DISPLAY

List of SYSPROG Services Distributed with AutoOPERATOR

The following table lists the SYSPROG commands distributed with AutoOPERATOR. For complete syntax and examples of resulting output, refer to the *MAINVIEW SYSPROG Services User Guide and Reference* manual.

Table 4. Primary SYSPROG Services Command Summary

| Command | Description |
|---------|---|
| ASM | Display auxiliary storage and page data set information. Syntax: ASM[,MAP] Example: ?ASM,MAP |
| BBXS | Problem diagnosis and recovery of BMC Software subsystem services. Syntax: BBXS[,DISPLAY START RESTART STOP MODIFY RELOAD] Example: ?BBXS,DISPLAY,ALL |

Table 4. Primary SYSPROG Services Command Summary (Continued)

| Command | Description |
|-----------|---|
| CPU | <p>Display total CPU utilization and proportionate use of CPU resources by job.</p> <p>Syntax: CPU[,time]</p> <p>Example: ?CPU,5</p> |
| CSA | <p>Display level of CSA utilization.</p> <p>Syntax: CSA[,MAP]</p> <p>Example: ?CSA,MAP</p> |
| ENQUEUEES | <p>Show system and data set enqueue conflicts.</p> <p>Syntax: ENQ[,dsname-qualifier] [,SYSDSN] [,minor-name] [,major-name]</p> <p>Example: ?ENQ,SYS1</p> |
| ESTORAGE | <p>Provides information on the use of expanded storage for paging.</p> <p>Syntax: EST[MAP] [time]</p> |
| FINDMBR | <p>Identifies the names of all libraries in a specified DD name that contain a specified member.</p> <p>Syntax: FINDMBR[,membername,DDname]</p> <p>Example: ?FINDMBR,TIME,SYSPROC</p> |
| HELP | <p>Displays help information for any SYSPROG service.</p> <p>Syntax: HELP[,servicename]</p> <p>Example: ?HELP,TIO</p> |
| INFO | <p>Displays information on the current operating environment.</p> <p>Syntax: INFO</p> <p>Example: ?INFO</p> |
| IO | <p>Display all outstanding non-teleprocessing I/O.</p> <p>Syntax: IO[,nnn]</p> <p>Example: ?IO,223</p> |

Table 4. Primary SYSPROG Services Command Summary (Continued)

| Command | Description |
|----------|--|
| MDEVICE | <p>Display the average number of I/O requests that were queued by the I/O supervisor for the specified device.</p> <p>Syntax: MDEV[,nnn-range][,time]</p> <p>Example: ?MDEV,150-151,5</p> <p>Do not specify times greater than 60 seconds.</p> |
| MEMSCAN | <p>Scans storage allocations for a specified character or hex string.</p> <p>Syntax: MEMSCAN [,string,area]</p> <p>Example: ?MEMSCAN,TEXT,PRIVATE</p> |
| MIO | <p>Monitor system channel paths and devices for a specified time interval.</p> <p>Syntax: MIO[PP PP-PP ALL TIME]</p> <p>Example: ?MIO,ALL,10</p> |
| MLCU | <p>Monitor logical control unit activity for a specified time interval.</p> <p>Syntax: MLCU,[LLL LLL-LLL ALL TIME]</p> <p>Example: ?MLCU,ALL,10</p> |
| MPATH | <p>Monitor I/O channel path activity.</p> <p>Syntax: MPA[,path(-range)][,time]</p> <p>Example: ?MPA,00-14,20</p> |
| MONITOR | <p>Monitor a job for 30 seconds: Provide CPU time and EXCP counts for job step.</p> <p>Syntax: MON,address-name</p> <p>Example: ?MON,JES2</p> |
| MSTORAGE | <p>Maps virtual storage areas above and below the 16MB line including location, length and percent used for each area, where available.</p> <p>Syntax: MSTORAGE</p> <p>Example: ?MSTORAGE</p> |
| MTP | <p>Display VOLSERS, device addresses, device types, and jobnames for tape and DASD pending-mount requests.</p> <p>Syntax: MTP</p> <p>Example: ?MTP</p> |

Table 4. Primary SYSPROG Services Command Summary (Continued)

| Command | Description |
|----------|--|
| PAGING | Provide paging rates for demand paging, pages reclaimed, swap paging, and paging for the overall system. Syntax: PAG Example: ?PAG |
| PRIVATE | Summarizes virtual storage allocations for private storage in an address space. Example: ?PRIVATE |
| PROGRESS | Display job and job step status for specified job name. Syntax: PRO,address-name Example: ?PRO,ISDIMS |
| REPLIES | Display outstanding MVS replies. Syntax: REP Example: ?REP |
| RESERVES | Show reserve activity for DASD devices. Syntax: RES Example: ?RES |
| RSM | Display use of real storage by system components, jobs, and initiators. Syntax: RSM[,MAP] Example: ?RSM,MAP |
| SOFTFRR | Displays data from SYS1.LOGREC software records with a specified module name. Syntax: SOF [,recovery-modname][,MAP][,yy.ddd][,errorid] Example: ?SOFTFRR |
| SPACE | Determines the amount of space available on a specified device. Syntax: SPA [dvn],[unitname],[volser],[partial volser] Example: ?SPACE |
| SRM | Displays SRM information. MAP requests the displaying of certain key SRM control block addresses. Syntax: SRM[,MAP NOMAP ASNAME] Example: ?SRM,MAP |

Table 4. Primary SYSPROG Services Command Summary (Continued)

| Command | Description |
|---------|---|
| STATUS | <p>Display current status of active jobs.</p> <p>Syntax: STA[,ALL][,IN] [,TSO][,address-name]</p> <p>Example: ?STA,ALL</p> |
| SYSDUMP | <p>Display contents of all filled systemdump data sets.</p> <p>Syntax: SYS</p> <p>Example: ?SYS</p> |
| TIOT | <p>Display all allocated devices for a specified address space,</p> <p>Syntax: TIO,address-space-name[,MAP] [,ACT]</p> <p>Example: ?TIO,INVENTORY</p> |
| TPIO | <p>Display all outstanding I/O (including teleprocessing devices).</p> <p>Syntax: TPI[,dvn]</p> <p>Example: ?TPI,285</p> |
| TQE | <p>Displays information about DIE routines scheduled for execution and pending timer interrupts for an address space</p> <p>Example: ?TQE</p> |
| TRACK | <p>Activates or stops SYSPROG command tracking.</p> <p>Syntax: TRACK[,xx ALL FREE STOP]</p> <p>Example: TRACK,FREE</p> |
| TSULIST | <p>Display user ID, ASID and node name for TSO users.</p> <p>Syntax: TSU</p> <p>Example: ?TSU</p> |
| USING | <p>Display all active jobs using a specified device.</p> <p>Syntax: USI{,dvn}{[,ALL]}{,volser}{[,IN]}</p> <p>Example: ?USI,PACK01</p> |
| VMCMD | <p>Issue a VM CP command.</p> <p>Syntax: VM,command-string[,volser][,IN]</p> <p>Example: ?VM,Q USERS</p> |

SYSPROG Service Syntax

SYSPROG syntax requires a unique service name (TCB, in the example below) followed by a comma and, optionally, a parameter such as address space name (JOBABC, in the example). Additional parameters are also delimited with commas.

Example

The service TCB, which displays the values of an address space's TCBs and RBs, can be invoked in any of the following ways:

```
TCB, JOBABC, MAP
TCB JOBABC MAP
TCB , JOBABC , MAP
```

Keyword operands must be spelled out far enough to avoid ambiguity. For example, if a service has only one keyword operand that begins with M, then only M need be entered to select that operand. If a service has two or more keyword operands beginning with the same letter, specify enough characters to clarify your choice. (For example, if the two keyword operands UNIT and UCB appear for the same service, then UN must be specified for UNIT and UC for UCB.)

The specific syntax of each service is described in detail in the individual service section. The following describes the SYSPROG services syntax:

UPPERCASE Letters and words are coded exactly as they appear in the description.

lowercase Letters and words represent variables for which specific information is to be substituted. Lowercase letters and words are not coded in the control statement.

subscripts These represent numeric parameters or sequenced positional parameters, which are not coded in the control statement.

... An ellipsis indicates that the preceding item may be repeated one or more times. If the ellipsis is followed by the same item subscripted, the last subscript indicates the maximum number of times that item may be repeated. The ellipsis is not coded.

{ } Braces indicate a required selection. If the braces enclose a stack of items, one of the items must be chosen. If a default is desired, it (and its associated keyword or subparameters) need not be coded. Braces are not coded.

[] Brackets enclose an optional item or stack of items, only one of which may be chosen. If a default is indicated, it will be used unless specifically overridden. Brackets are not coded.

Special characters are coded exactly as they appear in the control statement description:

| | |
|-----|-------------|
| , | comma |
| = | equal sign |
| () | parentheses |

| | |
|---|--------------|
| : | colon |
| ' | single quote |

The allowable SYSPROG parameters are defined below:

| | |
|-----------------------------------|--|
| aaaaaaaa | Memory address from one to eight hexadecimal characters; for example, (0AF4). |
| asid | The address space identification number. In most cases, the ASID number (one to four decimal digits enclosed in parentheses) may be used instead of the jobnames; for example, (08) or (23). |
| command | MVS or JES command; for example, V 052,ONLINE. |
| command-list | A member in the LIB PDS that contains a list of MVS or JES commands. |
| cuu[-y] | Device address and range; for example, 180 or 143-C. |
| dvn[-y] | Device number and range; for example, 180 or 143-C. |
| dsname | Data set name; for example, SYS1.DUMP or INVEN.Y1975.MONTH04. |
| generic-name | The generic name of devices defined in the system; for example, 3330, 3350, 3380. |
| esoteric-name | The esoteric name of devices defined in the system; for example, SYSDA, SORTWORK. |
| jobname/address-space-name | MVS jobname of an address space currently active in the system; for example, INVENTORY or JOB2. Jobname may also be specified as (nn), where nn is the ASID in decimal of the desired job, or as *, which means the last job referenced, or as @, which means the SYSPROG job/session where the command is entered; for example, ST,(1) or ST,*. |
| member | Member name of LIB data set. These members contain JCL for routine operational jobs or command lists for use with service SUBMIT. |
| time | The time in seconds a service is to monitor. |
| volser | Volume serial for disk pack or tape volume; for example, PACK01 or 004561. |

SYSPROG Services Message Format

The general SYSPROG message format is:

AMTssnc message- text

where:

- ss Is the last two characters of the SYSPROG load module name for the specified service. For example, the load module name for service ALLOC is ASTXA1A1; the abbreviated name is A1.
- n Is sequence character 1 to 9 or A to Z.
- c Is the message type code:
- I Information message
 - W Warning message
 - E Error message
 - A Action message

Each message is explained under the applicable service description on the following pages, and can be found by looking up the message ID in the manual index.

Subroutine: ASTXA1MN

Service: ASTXA1MN

Primary Use: Attaches the services and manages communication.

Processes abnormal service termination and all service malfunctions to prevent individual service errors from affecting overall system performance.

Processes all I/O errors and other system error conditions to isolate the system from SYSPROG malfunctions.

Messages

AMT002I COMMAND REJECTED; MAXSERVS EXCEEDED

A request has been entered for a SYSPROG service but the maximum number of concurrent services executing has been reached. The command is rejected.

AMT003I xxxxxxxx IS NOT A VALID SERVICE NAME

The service specified probably was spelled incorrectly.

AMT004I UNABLE TO LOCATE MODULE FOR SERVICE service-name

The load module for the specified service could not be found.

| | | |
|---------|---|---|
| AMT005I | INVALID SYNTAX, REQUEST IGNORED | The syntax specified in the request was invalid. This syntax scan tests for proper placement of the comma or blank between the service name and operands. |
| AMT006I | service-name CODE=failure-code, SERVICE FAILED | The specified service has failed with the displayed code. The function of SYSPROG is not impaired. The failure and service should be noted and documented for analysis by BMC Software. |
| AMT007I | BBX NOT AVAILABLE. REQUESTED SERVICE CAN NOT BE USED. | The entered SYSPROG command required communication with the BBX subsystem, which was not available. The command cannot be executed. |
| AMT008I | SPECIAL SERVICE xxxxxxxx NOT SUPPORTED | xxxxxxx is the long name of the service. The operator has requested a service whose entry in the name table indicates that the request is to be processed by a special routine, but there is no entry for the service in the special service table. The request is ignored. |
| AMT009I | COMMAND ENTERED NOT UNIQUE, RE-ENTER | The specified service name was not unique. Reenter a unique name. |
| AMT00AA | ENTER PASSWORD FOR SERVICE service-name | Enter the site-specified password to gain access to this service. |
| AMT00BI | PASSWORD INVALID, REQUEST IGNORED | The entered password did not match the site-specified password. Reenter the command with the proper password. |
| AMT00CI | CONSOLE NOT AUTHORIZED TO ENTER RESOLVE COMMANDS | To execute SYSPROG commands using MODIFY, a console must have SYS or ALL authority. |
| AMT00EI | RESOLVE NOT AUTHORIZED. REQUESTED SERVICE CANNOT BE USED. | SYSPROG is not properly authorized. The service invoked requires authorization. |
| AMT00FI | RESOLVE GLOBAL STORAGE FREED | During SYSPROG termination, all global system resources, such as CSA, have been freed. |
| AMT00GI | ERROR FREEING CIB, RESOLVE TERMINATED | This error occurs if two SYSPROG systems are running simultaneously with the same jobname when the command P SYSPROG is entered. One of the two SYSPROG systems will terminate normally; the second system will terminate with this message. |

| | |
|---------|--|
| AMT00II | <p>BLDL FAILURE - PERMANENT I/O ERROR ON DIRECTORY - REENTER</p> <p>An error occurred while BLDL was trying to find the directory entry for a SYSPROG load module. Reenter the last command.</p> |
| AMTIN1I | <p>SYSPROG INITIALIZATION, RELEASE x.x.x</p> <p>This message provides the release level.</p> |
| AMTIN2I | <p>AUTHORIZATION REQUEST REFUSED (mmm), TERMINATING</p> <p>The SYSPROG SVC denied authorization to a TSO user. This is an unauthorized use of the SVC and is normally associated with a TSO user who attempts to gain access to an authorized state for other than SYSPROG use.</p> <p>The error code, mmm, has the following possible meanings:</p> <p>004 Not a TSO address space.</p> <p>008 The AVT address passed to the SVC is not a valid address.</p> <p>012 Data in the AVT is not valid; the parameter passed to the SVC was not the address of SYSPROG's AVT.</p> <p>016 RB attributes are incorrect (for example, not a transient SVC).</p> <p>020 The attributes of the issuing program are invalid (for example, under TSO TEST).</p> <p>024 Not used.</p> <p>028 Request was invalid; neither set nor reset.</p> <p>032 The SVC number has not been supplied.</p> |
| AMTIN2W | <p>TSO/TEST ENVIRONMENT DETECTED - NOAPF OPTION FORCED</p> <p>SYSPROG initialization detected that SYSPROG is running under TSO TEST. In TSO TEST environment, SYSPROG must run non-authorized. Many SYSPROG services are not available while running in this mode.</p> |
| AMTIN3E | <p>RESOLVE UNABLE TO LOCATE REQUIRED MODULE xxxxxxxx</p> <p>A module required for successful initialization is missing. SYSPROG initialization terminated. Verify that all required modules are available in STEPLIB, AMTLIB, or link list libraries.</p> |
| AMTIN3I | <p>RESOLVE UNABLE TO ESTABLISH RECOVERY ENVIRONMENT</p> <p>During initialization, SYSPROG was unable to establish a recovery environment. MVS denied the recovery request due to a system problem, such as insufficient LSQA.</p> |
| AMTIN3W | <p>RESOLVE UNABLE TO LOCATE MODULE xxxxxxxx</p> <p>A module normally available, but not required, is missing. SYSPROG initialization continues. It is possible that one or more SYSPROG services may not be usable until the named module is available.</p> |
| AMTIN4I | <p>RESOLVE INITIALIZATION CONTINUES</p> <p>This message appears after a warning level message during SYSPROG initialization.</p> |

| | |
|---------|---|
| AMTIN4W | <p>xxxxxxx ASYNCH ENTRY IGNORED, TABLE OVERFLOW</p> <p>You have specified a list of asynchronous services (through \$\$INASYN or \$\$INASNT members) that has more than 16 entries. Subsequent entries in the list will be ignored.</p> |
| AMTIN5I | <p>SYNTAX ERROR IN \$\$INSYS0, MEMBER IGNORED</p> <p>The parameter split routine encountered invalid data while analyzing the parameter statement. The member is ignored.</p> |
| AMTIN6I | <p>SYNTAX ERROR IN \$\$INSYS0 (xxxxxxx), PARM IGNORED</p> <p>An individual parameter specified in member \$\$INSYS0 was invalid. The incorrect parameter is indicated by xxxxxxxx.</p> |
| AMTIN7I | <p>MODULE ASTXA1ii NOT FOUND, CONTINUING</p> <p>During initialization, an attempt was made to link to module ASTXA1ii (where ii is the two-character module suffix), but the module could not be found. Initialization continues, but the attempted function (for example, automatic startup of tracking or logging) is bypassed.</p> |
| AMTIN8I | <p>TSO USER REQUIRES OPER AUTHORITY</p> <p>TSO access to SYSPROG is available only to TSO user IDs with operator authority.</p> |
| AMTIN9I | <p>xxxxxxx SYNTAX ERROR IN USER ASYNCH ENTRY, CARD IGNORED</p> <p>xxxxxxx represents the first eight characters of the erroneous control statement. Asynchronous initialization continues by skipping this statement and proceeding to the next one.</p> |
| AMTINAI | <p>LOCAL 3270 INIT. FAILED; CONTINUING</p> <p>A LCL3270 DD statement is present, indicating that the SYSPROG full-screen TP monitor is required. The TP monitor initialization routine failed to complete.</p> |
| AMTINBW | <p>RESOLVE IS RUNNING NON-APF AUTHORIZED</p> <p>Warning message issued because many SYSPROG services are not available when running in this mode.</p> |
| AMTINHI | <p>MAJOR ERROR, OPERATING SYSTEM IS NOT MVS/XA OR MVS/ESA</p> <p>This version of SYSPROG will run only under MVS/XA or MVS/ESA. If a SYSPROG system for other than MVS/XA or MVS/ESA is desired, contact BMC Software.</p> |
| AMTINJW | <p>MODULE nnnnnnnn LOADED FROM AN UNAUTHORIZED LIBRARY</p> <p>The specified module was loaded from a library which was not APF authorized.</p> |
| AMTINKI | <p>JOBSTEP IS NOT AUTHORIZED</p> <p>Message is self-explanatory.</p> |
| AMTINLW | <p>nnnnnnnn NOT MARKED AUTHORIZED</p> <p>Message is self-explanatory.</p> |

| | |
|---------|---|
| AMTINMW | ABENDS MAY OCCUR EXECUTING SERVICES Message is self-explanatory. |
| AMTINPI | \$\$INPFKYS MEMBER CONTAINS INVALID DEFINITION - IGNORED The member \$\$INPFKYS in which the PF KEYS are defined contains an invalid definition. The invalid definition is ignored. |
| AMTINQI | SYSPROG COMMAND ID CHARACTER IS X X is replaced by the character specified by the CMDID= parameter in member \$\$INSYS0. |
| AMTINRE | COULD NOT ACTIVATE COMMAND EXIT The command exit could not be activated because: <ul style="list-style-type: none"> •SYSPROG is not operating in supervisor state •BBX is not active •BBX does not support the command exit function |
| AMTINTI | SPECIFIED SYSPROG SVC IS NOT INSTALLED Consult BBILIB members to ensure customization was performed. If customization was properly performed, contact BMC Software Customer Support. |
| AMTINUI | SYSPROG SVC HAS IMPROPER ATTRIBUTES ASSIGNED The most likely cause of this message is the presence of the APF attribute and/or the nonpreemptive attribute in the SVC table entry of the SYSPROG SVC. Check to ensure that neither attribute is present. |
| AMTINVI | SPECIFIED SVC IS NOT THE SYSPROG SVC There was an error in the installation/customization procedure. Contact BMC Software Customer Support |
| AMTINWI | SYSPROG SVC NOT SPECIFIED AND NOT FOUND The SYSPROG authorization facility was improperly installed. |
| AMTINXI | SYSPROG IS RUNNING NON-AUTHORIZED One of two things has happened: <ul style="list-style-type: none"> • SVC could not be found or was not correctly installed. • The TSO authorization tables were not correctly updated to authorize SYSPROG. Review the installation to be sure all steps are complete. |

Subroutine ASTXA1AL

Description: ASTXA1AL is a dynamic allocation/deallocation subroutine.

Primary Use: Performs dynamic allocation and deallocation for SYSPROG services.

Messages

AMTAL1I ALLOCATION ERROR, RETURN xxxx, ERROR xxxx, REASON xxxx
SYSPROG encountered an error while attempting to dynamically allocate a data set. The return, error, and reason codes are those returned by dynamic allocation; see the IBM manual *System Macro Facilities SPL*.

Subroutine ASTXA1AS

Description: ASTXA1AS is the asynchronous service manager.

Primary Use: Attaches asynchronous services as specified in \$\$INASYN (or \$\$INASNT) members in the LIB data set.

Messages

AMTAS1I service-name ENDED WITH RC=xx, FUNCTION DEACTIVATED
The specified asynchronous service has failed. SYSPROG has deactivated the service, which will not be reinstated until SYSPROG is restarted.

Subroutine ASTXA1XM

Description: ASTXA1XM is the cross-memory service routine.

Primary Use: Performs cross-memory SRB scheduling for SYSPROG services.

Messages

AMTXM1I CROSS MEMORY SERVICE UNABLE TO COMPLETE FOR address-space-name
The specified address space was swapped out and SYSPROG was unable to effect a swap-in within 15 seconds. This address space should be investigated for problems.

AMTXM2I CROSS MEMORY SERVICE ABENDED (Sxxx) FOR nnnnnnnn
A cross-memory service routine has unexpectedly terminated. The system completion code is reported in field xxx of the message. The name of the target address space (the one in which the cross-memory service terminated) is reported in field nnnnnnnn.

| | |
|---------|---|
| AMTXM3I | <p>CROSS MEMORY SERVICE FAILED; SRB FOR xxxxxxxx.yyyyyyyy TOO LONG</p> <p>A requestor of the cross-memory service specified an SRB routine that was too long to fit into the program area of SYSPROG's GSDA. xxxxxxxx is the CSECT name of the requesting service in the form ASTXA1ii, where ii is the two-character suffix of the CSECT name of the requesting service; yyyyyyyy is the name of the routine the caller requested.</p> |
| AMTXM4E | <p>UNABLE TO SWAP IN ADDRESS SPACE 'xxxxxxx' (aaaa)</p> <p>The cross memory service routine issued a SYSEVENT BRINGIN to force the target address space (name=xxxxxxx; asid=aaaa) into memory to schedule the required routine. Sixteen unsuccessful attempts were made before issuing this message. Investigate the specified address space to determine the problem.</p> |

SYSPROG Services Security

MAINVIEW AutoOPERATOR users can make use of the SYSPROG services security exit when SYSPROG commands are issued from either the terminal session or from an EXEC. The SYSPROG exit entry code ASSERV is applicable to MAINVIEW AutoOPERATOR as follows:

ASSERV Describes the function code passed in register 0 to the exit routine.
This is the exit point when the user ID and command are passed to the exit for security validation.

The following fields in the AVT control block are significant to MAINVIEW AutoOPERATOR/SYSPROG security:

AUTID Is the field in the AVT control block where the MAINVIEW AutoOPERATOR user ID is passed to the exit.

AVTREPLY Is the field in the AVT that contains the SYSPROG command issued by the user.

The user ID passed to the exit is the user ID of the terminal session user who issued the SYSPROG command from the command line, issued the SYSPROG line command from one of the MVS services applications, or invoked the EXEC that issues the SYSPROG service from the terminal session command line.

If the EXEC issues the SYSPROG command from the console (using the MVS MODIFY command), the user ID passed to the exit is that of the MAINVIEW AutoOPERATOR subsystem ID.

The exit can set return code 0 in register 15 to allow the service to continue or a non-zero return code to cause the service to be aborted.

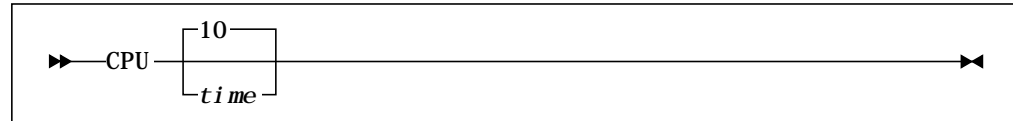
For more information about SYSPROG user exits, refer to Appendix A, “SYSPROG User Exit” on page 351

7. Module or program that created the subsystem.
8. TCB key of the address space that created the subsystem.
9. Time the subsystem was created.
10. Date the subsystem was created.
11. Data set from which the subsystem modules were loaded.
12. Information about the previously loaded BBCT.

CPU

The CPU service provides information about job activity by noting the proportionate use of CPU resources by job. Use CPU to monitor system activity.

Syntax



where

time Is the length of the sample period in seconds; the default is 10 seconds.

Example 1 (For PR/SM Systems)

To display information about CPU usage for the past 10 seconds, type:

| | | | | |
|------------|-----------------|--------|-----------------------|----------|
| cpu | | | | |
| AMTOB1I | PLEX BUSY | 59.1% | | ❶ |
| AMTOB1I | PLEX WAIT | 37.2% | | ❷ |
| AMTOB1I | PLEX OVERHEAD | 3.7% | | ❸ |
| | | | | ❹ |
| AMTOB1I | PARTITION RCVD. | 34.1% | WHICH IS | |
| | | | | ❺ |
| AMTOB1I | | 56.8% | OF ITS RELATIVE SHARE | |
| AMTOBOI | | | | |
| AMTOB3I | | USED | PRIORITY | |
| | ❻ | ❼ | ❽ | ❾ |
| AMTOB4I | JOB GEN1CLS | 16.4% | A3 (163) | |
| AMTOB4I | STC AAOSSEB2 | 9.2% | A4 (164) | |
| AMTOB4I | TSO CMR4X | 5.2% | FF (255) | |
| AMTOB4I | JOB PWW1JOB | 2.9% | A2 (162) | |
| AMTOB4I | STC JES2 | 2.3% | EF (239) | |
| AMTOB4I | STC DCSPAS | 2.0% | FF (255) | |
| AMTOB4I | TSO LGS171 | 1.7% | FF (255) | |
| AMTOB4I | STC *MASTER* | 1.7% | FF (255) | |
| AMTOB4I | TSO EUK2 | 1.7% | FF (255) | |
| AMTOB4I | STC ITSTPAS | 1.5% | A0 (160) | |
| AMTOB4I | STC CATALOG | 1.4% | FF (255) | |
| AMTOB4I | TSO IXR2 | 1.1% | FF (255) | |
| AMTOB4I | STC MIMB | 1.1% | FF (255) | |
| | | | | ❿ |
| AMTOB5I | ALL OTHERS USED | 8.6% | | |
| | | | | ⓫ |
| AMTOB6I | TOTAL USED | 56.8% | | |
| AMTOBOI | | | | |
| AMTOB2I | BATCH= | 34.2%, | STC= | 43.9%, |
| | TSO= | 21.9%, | TOTAL= | 100.0% ⓫ |

Legend:

1. Percentage of the sample period that the complex was performing useful work.
2. Percentage of the sample period the processors were not dispatched to a partition because the partitions were waiting.
3. Percentage of the sample period used by the hardware to dispatch processors to partitions.
4. Percentage of the sample period that the partition hosting the SYSPROG session was dispatched. Subtracting this percentage from the PLEX BUSY percentage yields the percentage of the sample all other partitions in the complex were dispatched.
5. Percentage of the partition's *relative share* (the amount of processing time the partition is supposed to receive when the partition's demands are high and resources are limited) used during the sample period. When the partition can use more time and time is available, it can exceed 100 percent of its relative share. Likewise, the partition can (when wait assist is off) receive less than its relative share.
6. Type of address space: a batch job (JOB), started task (STC), or TSO session (TSO).
7. Names of the 15 highest usage address spaces in the system with CPU usage of at least 1 percent.
8. CPU usage by address space.
9. Priority of the address space.
10. CPU usage for all other address spaces in the system.
11. Sum of CPU usage for all address spaces in the partition during the sample interval. This sum is equal to the partition's relative share usage (56.8 percent in this example).
12. Usage distribution among batch jobs, started tasks, and TSO sessions.

Example 2 (For Non-PR/SM, Non-MDF Systems)

To display information about CPU usage for the past 10 seconds, type:

| | | | | | | |
|------------|--|-------------|------|---------|-------|---|
| cpu | | | | | | |
| AMT015I | STATISTICS BEING GATHERED FOR CPU DATA | | | | | ❶ |
| AMT014I | JOB INVENTORY USED | 11.96 SECS, | 48%, | PRTY 11 | (162) | |
| AMT014I | JOB SMU1RLA USED | 6.44 SECS, | 26%, | PRTY 7 | (84) | ❷ |
| AMT011I | TOTAL FOR MVS 0/HEAD | 4.12 SECS, | 21% | | | ❸ |
| AMT012I | TOTAL FOR BATCH JOBS | 10.01 SECS, | 50% | | | ❹ |
| AMT013I | TOTAL FOR TSO SESSIONS | 5.87 SECS, | 29% | | | ❺ |
| AMT017I | CPU 0 WAS 66% BUSY | | | | | ❻ |

Legend:

1. Message issued at the beginning of data collection.
2. Amount of time and percentage of CPU used by each of the 10 most active jobs in the system. Although only the 10 most active jobs are displayed, the total figures reflect all jobs.
3. Total MVS overhead not allocated to a specific address space.

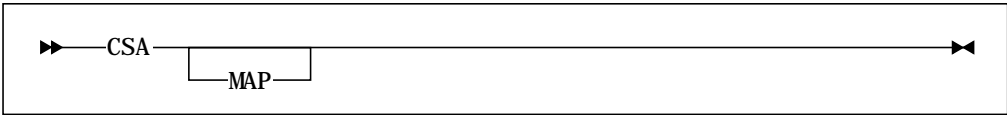
4. Total time and percentage of CPU taken by batch jobs during the sample period. This includes both submitted jobs (JOB) and started tasks (STC).
5. Total time and percentage of CPU time taken by TSO sessions during the sample period.
6. Percentage the CPU was busy during the sample period. (This message is repeated for each CPU in a multiprocessor.)

Note: In an MP environment, the percentages could total more than 100 percent. Over the sample period, any CPU in an MP system could have been active 100 percent of the time, or a single job could have executed on each of the CPUs several times during the sample period.

CSA

The CSA service displays common service area (CSA) and extended common service area (ECSA) utilization.

Syntax



where

MAP Provides a detailed display of CSA/ECSA usage by storage subpool and protection key.

Example

To display a detailed description of CSA and ECSA usage, type:

| | | | | | | | | | | | | | |
|---------|----------------------------------|-------|-------|------|-------|--------------|--------|-------|--------|--------|-------|---|---|
| csa map | | | | | | | | | | | | | |
| AMTSQCI | STORAGE TOTAL | | | | | CSA : | 3864K | | ECSA : | 15M | ❶ | | |
| AMTSQCI | LARGEST UNALLOCATED AREA . . . : | | | | | 1388K | | | 3120K | | ❷ | | |
| AMTSQCI | (ALLOCATED): | | | | | 2092K | (54%) | | 12M | (76%) | ❸ | | |
| AMTSQCI | (FFS=FRAGMENTED FREE SPACE): | | | | | 162K | (4%) | | 415K | (3%) | ❹ | | |
| AMTSQCI | (CONVERTED TO SQA): | | | | | 384K | (10%) | | 0K | (0%) | ❺ | | |
| AMTSQCI | CURRENTLY USED | | | | | 2476K | (64%) | | 12M | (79%) | ❻ | | |
| AMTSQ8I | OWNER | SUP | SCHED | VSPC | | | DM | VTAM | IMS | USER | ❷ | | |
| AMTSQ4I | SP/KEY | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8- F | TOTAL | ❸ | |
| AMTSQAI | | | | | | CSA | | | | | | | |
| | ❹ | | | | | | ❺ | | | | | | ❻ |
| AMTSQ5I | 227 | 9K | | | | | | 30K | | | 39K | | |
| AMTSQ5I | 228 | 14K | 8K | | 1K | | | | 97K | 50K | 170K | | |
| AMTSQ5I | 231 | 30K | 31K | | | | | 67K | 569K | | 697K | | |
| AMTSQ5I | 241 | 736K | 52K | | 16K | | 5K | 7K | 68K | 141K | 1024K | | |
| AMTSQ5I | FFS | 60K | 20K | | 7K | | 3K | 24K | 23K | 25K | 162K | ❷ | |
| AMTSQ5I | TOT | 848K | 112K | | 24K | | 8K | 128K | 756K | 216K | 2092K | ❸ | |
| AMTSQAI | | | | | | EXTENDED CSA | | | | | | | |
| AMTSQ5I | 227 | 5K | | | 189K | | | 231K | | | 425K | | |
| AMTSQ5I | 228 | 1204K | | | 1800K | | 57K | 18K | | 1132K | 4211K | | |
| AMTSQ5I | 231 | 409K | 32K | | 130K | | | 847K | 1K | | 1419K | | |
| AMTSQ5I | 241 | 4928K | 112K | | 236K | | 6K | 372K | 5K | 393K | 6051K | | |
| AMTSQ5I | FFS | 158K | 20K | | 106K | | 5K | 96K | 6K | 23K | 415K | ❷ | |
| AMTSQ5I | TOT | 6704K | 164K | | 2460K | | 68K | 1546K | 12K | 1548K | 12M | ❸ | |

Legend:

- 1. Total amount of CSA/ECSA defined.
- 2. Largest unallocated area in CSA/ECSA.
- 3. Amount of space allocated and percentage of total CSA/ECSA.

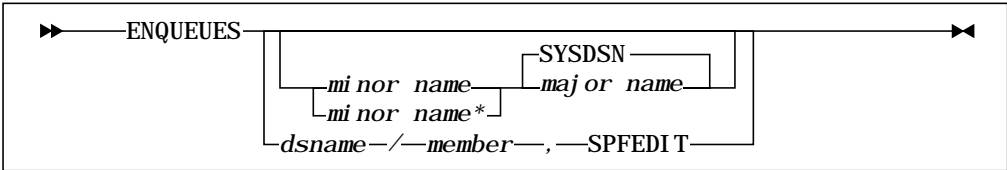
4. Amount of fragmented free space and percentage of total CSA/ECSA.
5. Amount of space converted to SQA/ESQA and percentage of total CSA/ECSA.
6. Total amount of space currently used and percentage of total CSA/ECSA.
7. Owner of storage protect key.
8. Storage protect key.
9. Storage subpool number.
10. Amount of CSA/ECSA allocated for a each storage protect key within each subpool; for example, 30KB of subpool 227 is assigned a protection key of 6.
11. Total amount of CSA/ECSA currently allocated to a subpool.
12. Total amount of fragmented free space by storage protect key and subpool.
13. Total amount of CSA/ECSA currently allocated to a storage protect key and the subpool.

ENQUEUEES

The ENQUEUEES (ENQ) service displays current enqueue conflicts or requested system enqueue information. An enqueue conflict exists when one or more jobs are waiting on a resource held by another job. This service lets you determine the cause of reduced system performance, the name and system ID for jobs holding a resource, and the jobs waiting for the same resource.

When you type the ENQUEUEES command without operands, information about any current enqueue conflicts is displayed. The ENQUEUEES service also displays enqueue information for a specified minor name and major name (R name and Q name, respectively), or all enqueue information for a specified major name (Q name). The default major name is SYSDSN. Therefore, you can display data set enqueues simply by typing the minor name (data set name).

Syntax



where

- minor name* Is the R name used by ENQUEUEE.
- minor name** Indicates a partial minor name. Partial names may be specified using a wildcard character (asterisk).
- major name* Is the Q name used by ENQUEUEE; SYSDSN is the default.
- dsname* Is a data set name.
- member* Is a member name.
- SPFEDIT Is the major name used by ISPF EDIT.

Examples

The following examples demonstrate how the ENQUEUEES service presents information on enqueue conflicts and resource ownership.

Conflict Information Example

An enqueue conflict exists when one or more jobs wait for a resource held by another job. The ENQUEUEES service displays the name and system ID of jobs holding a resource and the jobs waiting for the same resource. Use this information to determine the source of the performance delay in your system.

To display all current enqueue conflicts, type:

| enqueuees | | | | | | | | | | | | | |
|-----------|--------|---------|------------|------------|----------|---------|------------|-----|--------|----|--|--|--|
| | ① | ② | ③ | ④ | | | | | | | | | |
| AMTQ1PI | SYSTEM | (LOCAL) | Q=SYSZVVDS | R=CATALOG. | ICFMCAT. | SYSC | | | | | | | |
| AMTQ1QI | SYSID | JOBNAME | ASID | STAT | TYP | TIME | 14: 12: 19 | | | | | | |
| AMTQ1RI | SYSB | QA7A | (0087) | OWNS | EXC | | | | | | | | |
| AMTQ1RI | SYSA | FLN1 | (0096) | WAIT | EXC | | | | | | | | |
| AMTQ1RI | SYSB | QA7 | (0352) | WAIT | EXC | | | | | | | | |
| AMTQ1LI | | | | | | | | | | | | | |
| AMTQ1PI | SYSTEM | (LOCAL) | Q=SYSIGGV2 | R=ICFUCAT. | VTSG304 | | | | | | | | |
| AMTQ1QI | SYSID | JOBNAME | ASID | STAT | TYP | TIME | 14: 12: 19 | | | | | | |
| AMTQ1RI | SYSB | ARG1 | (0162) | WAIT | EXC | | | | | | | | |
| AMTQ1RI | SYSC | MPP1 | (0121) | OWNS | SHR | RES=003 | PEND | 291 | TSG304 | NR | | | |

Legend:

- Scope of enqueue. The possible scopes are as follows:
 - SYSTEMS
 - SYSTEM
 - STEP
- Whether the resource is global or local.
- Major name (Q=).
- Minor name (R=).
- System ID for the system executing the task that is holding or waiting for the resource.
- Jobname, TSO user ID, or started task ID for the address space containing the task that is holding or waiting for the resource. The jobname is not available in some situations.
- ID for the address space holding or waiting for the resource.
- Current status (OWNS or WAIT), indicating that the task holds (OWNS) the resource or is waiting (WAIT) for the resource.
- Type of enqueue: EXC for exclusive, SHR for shared.
- Indicates that a reserve is associated with the enqueue. The reserve count is also displayed unless it is zero, in which case the equal sign is also omitted.
- If present, indicates that the reserve is pending, which means that the task is waiting to reserve the devices. Generally, the device is reserved by another system.
- Device number in hexadecimal.
- Volume serial number.

14. If present, indicates that the device is not ready.

Resource Ownership Information Examples

Typing ENQUEUES, followed by the minor name (R name) and major name (Q name), displays the job(s) that holds the specified resource and information related to its use of the resource. A partial minor name displays all enqueues with minor names that begin with the specified characters for the requested major name. An asterisk typed as the last character indicates a partial minor name. SYSDSN is the default major name.

To display all enqueues for data sets starting with SYS1.L, type:

```
enqueues sys1.l*
AMTQ1P1 SYSTEM (LOCAL) Q=SYSDSN R=SYS1.LPALI B
AMTQ1QI SYSD JOBNAME ASID STAT TYP TIME 16:05:20
AMTQ1RI SYSB MEE2 (0192) OWNS SHR
AMTQ1LI
AMTQ1P1 SYSTEM (LOCAL) Q=SYSDSN R=SYS1.LINKLI B
AMTQ1QI SYSD JOBNAME ASID STAT TYP TIME 14:12:19
AMTQ1RI SYSB LLA (0006) OWNS SHR
```

Besides SYSDSN, another common major name is SPFEDIT. ISPF EDIT uses the major name SPFEDIT and a 52-character minor name consisting of the data set name (a 44-character field padded with blanks), followed by the member name.

The ENQUEUES service provides special syntax to allow you to display these ISPF EDIT enqueues for specific members. Type the data set name (dsn), followed by a slash (/), followed by the member name, a comma (or blank), and the major name SPFEDIT.

For example, to determine the jobnames editing member IEASYS00 in SYS1.PARMLIB, type:

```
enqueues sys1.parmlib/ieasys00,spfedit
AMTQ1P1 SYSTEM (LOCAL) Q=SPFEDIT R=SYS1.PARMLIB IEASYS00
AMTQ1QI SYSD JOBNAME ASID STAT TYP TIME 14:12:19
AMTQ1RI SYSB CIR3 (0183) OWNS EXC
```

In each of these examples, the header line is followed by two or more information lines. The ENQUEUES service displays 1 line for each task that issued an ENQ or RESERVE for the resource.

To display all jobs using all resources for a major name, type an asterisk (or a comma to indicate no minor name), followed by the major name, as illustrated below:

```
enqueues *,syszvds
AMTQ1P1 SYSTEM (LOCAL) Q=SYSZVDS R=CATALOG.ICFMCAT.SYSC
AMTQ1QI SYSD JOBNAME ASID STAT TYP TIME 14:12:19
AMTQ1RI SYSB QA7A (0087) OWNS EXC
AMTQ1RI SYSB FLN1 (0096) WAIT EXC
AMTQ1RI SYSD QA7 (0352) WAIT EXC
```

Note: Specifying a partial minor name may produce a large volume of output.

To display additional information about expanded storage frames, type:

```
estorage map
AMTR30I STATISTICS BEING GATHERED FOR EXPANDED STORAGE DATA
AMTR31I ESF INSTALLED/ONLINE    1024/   1024
AMTR32I AVAILABLE ESF                      768
AMTR33I REAL STORAGE MOVEMENT TO ES  20.00 PAGES/SEC
AMTR34I ES MI GRATION TO AUX STORAGE  18.00 PAGES/SEC
AMTR35I AVERAGE MI GRATION AGE           40 SEC
      ①      ②      ③
AMTR36I  JOBNAME      ASI D      ESF
AMTR37I  INVENTORY    0017      0038
AMTR37I  TESTJOB1     0023      0062
```

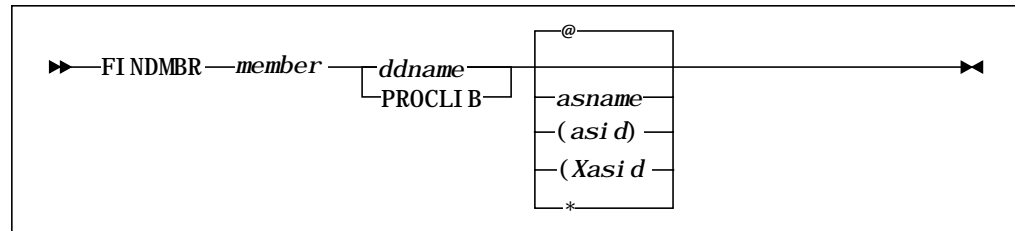
Legend:

- 1. A line is displayed for each address space that owns expanded storage frames.
- 2. Address space ID for each job.
- 3. Number of expanded storage frames currently owned by each job.

FINDMBR

The FINDMBR (FI) service identifies the names of all libraries in a specified DD name that contain a specified member.

Syntax



where

| | |
|-------------------|---|
| <i>member</i> | Is the member name. |
| <i>ddname</i> | Is the DD name. When aliases are used, the true member name appears in the output. |
| PROCLIB | Specifies that all PROCnn (00 through 99) DD names for JES2 or JES3 are to be searched for member name. If no PROCnn DD names are allocated, the PROCLIB DD name is searched, if allocated. |
| @ | Specifies your own address space; the default. |
| <i>asname</i> | Is the address space name. |
| (<i>asi d</i>) | Is the address space identifier in decimal format. |
| (<i>Xasi d</i>) | Is the address space identifier in hexadecimal format. |
| * | Specifies the last address space entered. |

Examples

To list all members named TIME in the SYSPROC concatenation for your address space, type:

```

findmbr time sysproc
      1      2      3
AMTFM1I JOBNAME: TS01      DDNAME: SYSPROC      MEMBER: TIME
AMTFMVI =====
      4      5      6      7      8
AMTFM2I CT      LAST UPDT      USERID      DATA SET
AMTFMLI 1 12SEP91 14:17 BKE1      SYSP. STD. I SPPLI B
AMTFMLI 3 21AUG93 08:57 IMB1      SYS2. BOOL. BBCLI B
  
```

Legend:

1. Jobname.
2. DD name.

3. Member name.
4. Concatenation number of library within the specified DD name.
5. Date member was last updated.
6. Time member was last updated.
7. ID of user who updated the member last.
8. Name of data set.

To list all RESXA Proc names available through the alternate JES2, type:

```

findmbr resxa proclib jes2a
AMTFMII JOBNAME: JES2A      DDNAME: PROC00      MEMBER: RESXA
AMTFMVI =====
AMTFM2I CT      LAST UPDT  USERID  DATASET
AMTFMLI 1      02JAN94 14:17 REK1     SYS1. PROCLIB
AMTFMLI 4      24MAR94 08:57 SLG1     SYS2. BOOL. PROCLIB

AMTFMII JOBNAME: JES2A      DDNAME: PROC01      MEMBER: RESXA
AMTFMVI =====
AMTFM2I CT      LAST UPDT  USERID  DATASET
AMTFMLI 1      02FEB91 14:17 DEW1     SYSB. PROCLIB
AMTFMLI 4      01APR91 08:57 LAW1     SYS2. BOOL. SYSB. PROCLIB

AMTFMII JOBNAME: JES2A      DDNAME: PROC02      MEMBER: RESXA
AMTFMVI =====
AMTFM0I MEMBER RESXA NOT FOUND IN PROC02

```

To list the data sets that are allocated with DD name LOADLIB to the address space DWPBPAS and contain load module LGS, type:

```

findmbr lgs loadlib dwbpas
AMTFMII JOBNAME: DWPBPAS    DDNAME: LOADLIB    MEMBER: LGS
AMTFMVI =====
           ①      ②      ③
AMTFM3I CT SIZE  ALIAS OF  AC  DATASET
AMTFMLI 1 30360 MAIN      255 SYS1. ISPLIB
AMTFMLI 3 30148 MAIN      255 SYS2. BOOL. BBPLIB

```

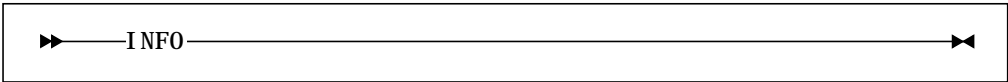
Legend:

1. Number of bytes in load module.
2. Alias name of member.
3. Authorization code for the module.

INFO

The INFO (IN) service displays information about the current operating environment. This service lets you list the release level of the operating system, the serial number and model of each CPU, and the type of IPL last performed.

Syntax



Example

To display information about the current operating environment, type:

```
info
AMTR02I MVS RELEASE SP4. 2. 2      FMID JBB4422      1
AMTR03I CPU  0 SERIAL NUMBER 0B2363 MODEL 9021      2
AMTR03I CPU  1 SERIAL NUMBER 1B2363 MODEL 9021
AMTR03I CPU  2 SERIAL NUMBER 2B2363 MODEL 9021
AMTR04I LAST IPL WAS COLD START (CLPA) ON 04/23/1996 AT 14: 04: 20 FROM ES430P 3
AMTR05I TSO VERSION 2 RELEASE  3 MOD 1              4
AMTR06I VTAM TERMINAL ID B100T31                    5
```

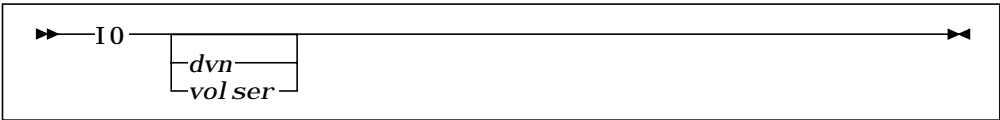
Legend:

- 1. MVS release and its FMID.
- 2. Serial number for each CPU and the CPU model.
- 3. Type of IPL most recently performed (cold start, warm start, quick start).
- 4. Current release of TSO/E.
- 5. VTAM (or TCAM) logical terminal ID.

IO

The IO service detects potential device performance delays by displaying all outstanding non-TP I/O. Use this service to determine whether an address space is hung up because of an incomplete I/O operation, or to determine whether a device is in error recovery.

Syntax



where

- dvn* Is the device number for which outstanding non-TP I/O is to be displayed.
- vol ser* Is the volume serial number for which outstanding non-TP I/O is to be displayed.

Note: If you do not specify *dvn*, the IO service monitors all outstanding non-TP I/O.

Examples

To display all outstanding non-TP I/O, type:

```
io
  ①  ②  ③
AMTI 11I  INVENTORY UNIT 223 PACK08 IOQ 00F832A0 DRIVER- EXCP CCHH- 191 3
                ④  ⑤  ⑥  ⑦
AMTI 11I * TEST      UNIT 180 333214 IOQ 00F85A00 DRIVER- VSAM
AMTI 11I + *MASTER* UNIT 1A4 PAGEL1 IOQ 00F91300 DRIVER- ASM  CCHH- 271 12
```

Legend:

- 1. A one-character flag. Valid characters are as follows:
 - blank Line represents the I/O request currently active on the device
 - * The I/O request on this line has been queued by the I/O supervisor pending completion of a previous I/O request
 - + An ASM channel program is active on this device
- 2. Address space name.
- 3. Device number.
- 4. Volume serial of the device, if it is a direct access storage or tape device.
- 5. IOQ address.

6. Name of IOS driver. Valid driver codes are

| Code | Driver |
|----------|--|
| MISC | Miscellaneous driver |
| EXCP | EXCP driver |
| VSAM | VSAM driver |
| VTAM | VTAM driver |
| TCAM | TCAM driver |
| OLTEP | OLTEP driver |
| PCIFETCH | Program FETCH driver |
| JES3 | JES3 subsystem |
| IOSPURGE | Internal IOS PURGE IOQ routine |
| VPSS | Vector processing subsystem (3838 array processor) |
| CRYPTO | Cryptographic subsystem |
| ASM | Auxiliary storage manager (paging supervisor) |
| DYNPATH | Path reconfiguration |
| SVC-33 | IO's "HALT I/O" SVC routine |
| R-CLEAR | Clear device recovery |
| R-SUBCHN | Subchannel recovery |
| SVCPURGE | IO's "PURGE I/O" SVC routine |
| ALTPATH | Alternate path recovery |
| MIH | Missing interrupt handler |
| UNKNOWN | Unknown or unassigned driver code in use |

7. Seek address in CCHH format (DASD device only).

To display IO for volume PACK08, type:

| | | | | | | | | | |
|------------------|------------|------------|---------------|---------|----------|-------------|-------|-----|----|
| io pack08 | | | | | | | | | |
| AMTI 11I | GOJOB UNIT | 283 | PACK08 | IOQ | 00F83DA0 | DRIVER-EXCP | CCHH- | 191 | 3① |
| | | ② | | ③ | | ④ | | | |
| AMTI 12I | UNIT B00: | RESERVES-0 | ALLOCATIONS-3 | OPENS-2 | | | | | |

Legend:

1. Device number, volume serial, IOQ and IOSB addresses of the I/O, the MVS I/O driver, and the seek address for this I/O operation.
2. Number of outstanding RESERVE requests for this device.
3. Number of address spaces allocating this device.
4. Number of open DCBs against this device.

Note: Message AMTI12I is displayed for DASD devices only.

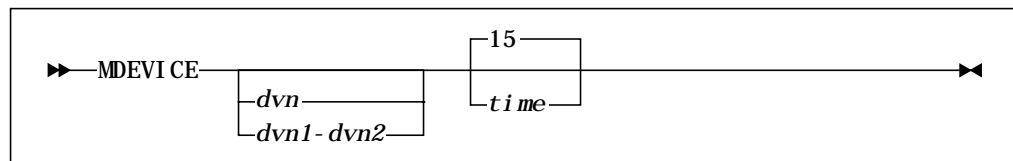
MDEVICE

The MDEVICE (MDEV) service monitors all or selected devices attached to all processors in the configuration sampled within a 15-second interval.

The MDEVICE service

- Monitors the I/O activity of all device and address spaces (it can also monitor the I/O activity of a specified device or address space)
- Detects I/O bottlenecks that cause workload delays

Syntax



where

dvn Is a device number.

dvn1 - dvn2 Is a range of device numbers; *dvn1* is the lowest device number and *dvn2* is the highest device number.

time Specifies the length of the sample period in seconds. The default sample period is 15 seconds.

Examples

To monitor all devices for 15 seconds, type:

```

mdevice
AMT050I I/O DEVICE DATA BEING GATHERED

AMT051I I/O DEVICE ACTIVITY REPORT
      ①    ②    ③    ④    ⑤    ⑥    ⑦    ⑧    ⑨    ⑩
AMT036D -----
AMT036H DEV VOLSER %BSY QLTH SEEK ACYL RATE CONN PEND DISCT
AMT036I B02 TSG002   45  .66   7  199   22   9   3   11
AMT038D -----
      ⑪    ⑫    ⑬
AMT038H ASIDNAME ASID %BSY
AMT038I WKR1      85   33
AMT038I INIT      24   22
AMT038I JES2      13   11
AMT038I CMR8      77   33

```

Legend:

1. Device number whose activity was measured.
2. Volume serial number on the device measured.
3. Percentage of time an I/O request was active for the device.
4. Average number of I/O requests that were queued by the MVS/XA I/O supervisor for the device.
5. Total number of head movements observed for the device during the interval (N/A for non-DASD and fixed-head devices).
6. Average number of cylinders moved for each seek observed for the device.
7. Number of I/O requests per second addressed to this device.
8. Average time (in milliseconds) the device was connected to a channel path on a per-request basis.
9. Average time (in milliseconds) each request was held, pending availability of a waiting for path, device, or control unit.
10. Average time (in milliseconds) the device was disconnected from the channel path pending a device or control unit function (seek) on a per-request basis.
11. Name of an address space found to be a significant user of the device. ***** in this field indicate that the address space terminated between the time the data was collected and the time the MDEVICE report was generated. *OTHERS* in this field indicate that the address space had more users during the monitoring period than could be listed. All activity for the overflow of users is reported as *OTHERS*.
12. Address space ID found to be a significant user of the device.
13. Percentage of the device busy time that this address space was requesting the device.

Usage Note

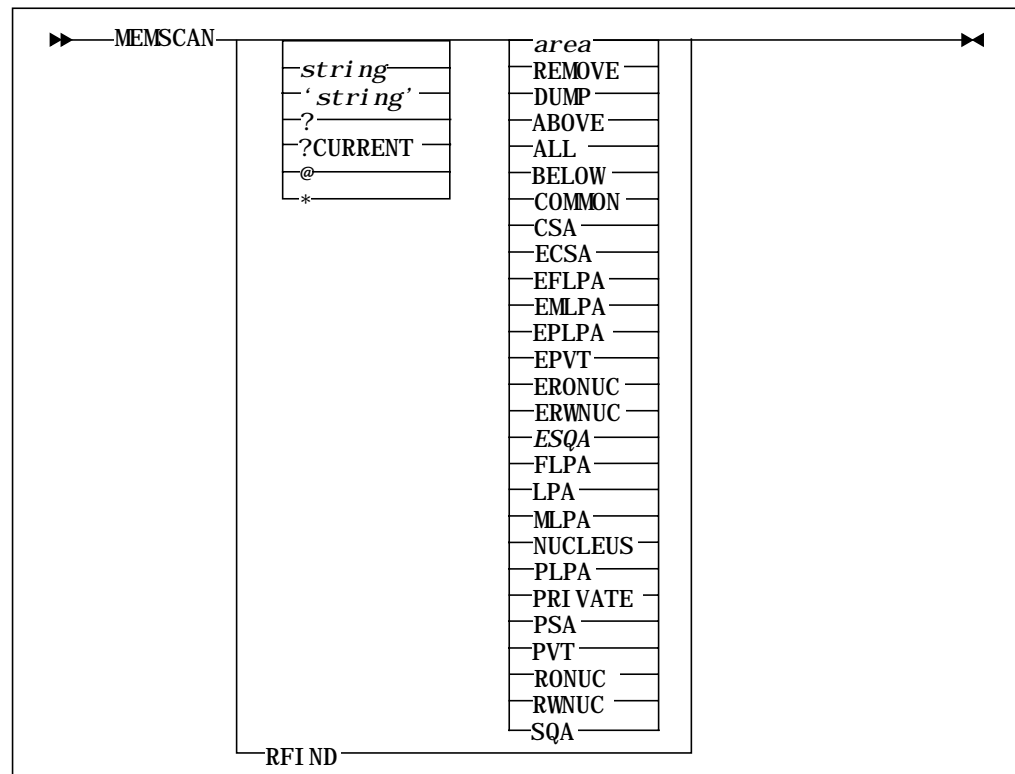
The MDEVICE service uses a sampling technique for measuring I/O activity. The default sampling period is 15 seconds at a rate of 4 samples per second. If you enter an override value for `time`, the sample rate is 4 samples per second if the period is 15 seconds or less and 2 samples per second if the period is greater than 15 seconds.

MEMSCAN

The MEMSCAN (ME) service scans the specified storage areas for the specified character or hexadecimal string and displays the location of each occurrence of the string. In addition, a symbol of the form @nn is created for each occurrence until 99 symbols have been created. These symbols can then be used in conjunction with the DUMP and ZAP services to display or modify the located data.

When 99 symbols have been created, MEMSCAN displays 64 bytes of storage containing the next occurrence of the string and then terminates. The scan may be resumed to find the next occurrence by typing MEMSCAN without any operands. An asterisk (*) may be used to reference the address of the last occurrence of the string symbolically on the DUMP, EQUATE, and ZAP services.

Syntax



where

You may specify up to 10 parameters. The first parameter may be:

string

Character strings that do not contain commas or blanks may be typed directly. Strings containing blanks or commands must be enclosed in single quotation marks. For example: 'ABC,DEF'

Note: Characters typed in lower case are converted to upper case. type strings as hexadecimal data to search for lower case.

| | |
|-----------------|--|
| <i>'string'</i> | Hex data must be enclosed in single quotation marks and preceded by an "X." For example: X'C1C2C36BC4C5C6.' |
| ? | Displays a map of storage depicting the various areas within the address space. |
| @ | Displays the symbols previously created by MEMSCAN. |
| * | Represents the address of the last location set by one of several services. typing an asterisk is equivalent to entering the address as a hexadecimal string. See Example 1. |
| Nul l | Omitting all parameters or omitting the first parameter causes MEMSCAN to resume an interrupted search. |
| <i>area</i> | Subsequent parameters (2nd through 10th) as described in the following section. |
| RFIND | Finds a previous scan. |

Area Keywords

Any of the following keywords may be specified in any sequence, separated by commas or blanks. Only the first three letters of each keyword are required. Area keywords are cumulative in their effect. If an area keyword is not specified, the default is COMMON.

| | |
|---------------|---|
| REMOVE | Causes any previously created symbols of the format @nn (where nn is 01 through 99) to be deleted prior to starting the scan. |
| DUMP | Causes MEMSCAN to display 64 bytes of storage surrounding each occurrence of the string. |
| ABOVE | Scans all storage above the 16 megabyte line. |
| ALL | Scans all storage (0 through 7FFFFFFF). |
| BELOW | Scans storage below the 16 megabyte line. |
| COMMON | Scans common storage. Common storage is comprised of CSA, ECSA, SQA, and ESQA. The PSA, LPA, and nucleus area, although commonly addressee, are excluded. |
| CSA | Scans the Common Service Area (CSA) located below the line. |
| ECSA | Scans the Extended Common Service Area. |
| EFLPA | Scans the Extended Fixed Link Pack Area. |
| EMPLPA | Scans the Extended Modified Link Pack Area. |
| EPLPA | Scans the Extended Pageable Link Pack Area. |
| EPVT | Scans the Extended Private area. |
| | Note: Only the private area of the address space within which the SYSPROG service is executing is scanned. |
| ERONUC | Scans the Extended read-only nucleus. |

| | |
|----------------|---|
| ERWNUC | Scans the Extended read/write nucleus. |
| ESQA | Scans the Extended System Queue Area. |
| FLPA | Scans the Fixed Link Pack Area. |
| LPA | Scans the entire Link Pack Area. This includes FLPA, MLPA, PLPA, EFLPA, EMLPA, and EPLPA. |
| MLPA | Scans the Modified Link Pack Area (below the 16 megabyte line). |
| NUCLEUS | Scans the entire nucleus. This includes RWNUC, RONU, ERWNUC, and ERONU. |
| PLPA | Scans the Pageable Link Pack Area (below the 16 megabyte line). |
| PRIVATE | Scans private storage, both below and above the 16 megabyte line. |
| PSA | Scans the Prefixed Save Area. |
| PVT | Scans private storage below the 16 megabyte line. |
| RONUC | Scans the read-only nucleus below the 16 megabyte line. |
| RWNUC | Scans the read/write nucleus below the 16 megabyte line. |
| SQA | Scans the System Queue Area below the 16 megabyte line. |

Examples

Example 1: To locate vectors to IGGPOST0:

```

lpa, iggpost0 ①
AMTL41I MODULE=IGGPOST0 < EPLPA >
AMTL42I LA=030ADF38 EP=00AF72F8 (AMODE- 31 ) LEN=000008
AMTL43I LPDE=00C43588
AMT001A RESOLVE PLUS
memscan, * ②

AMTVS8I SEARCHING FOR X' '
AMTVSWS WILL BE SCANNING: CSA 00800000- 00B97FFF
AMTVSWS WILL BE SCANNING: SQA 00EBE000- 00FC9FFF
AMTVSWS WILL BE SCANNING: EXTSQA 016D2000- 020AFFFF
AMTVSWS WILL BE SCANNING: EXT- CSA 043D4000- 07FFFFFFF
AMTVSNN SCANNING: CSA 00800000- 00B97FFF
AMTVSNN SCANNING: SQA 00EBE000- 00FC9FFF
AMTVS9I STRING FOUND AT 00C435AC IN SQA @01
AMTVSNN SCANNING: EXTSQA 016D2000- 020AFFFF
AMTVSNN SCANNING: EXT- CSA 043D4000- 07FFFFFFF
AMTVSSI SEARCH STOPPED AT THE END OF THE AREA (07FFFFFFF)
AMT001A RESOLVE PLUS
dump, @01- 20 ③
AMTC12I 00C4358C 00 00000000 C9C7C7D7 D6E2E3F0 80AF72F8 *... IGGPOST0... 8*
AMTC12I 00C4359C 00000000 00001800 B1220000 00000008 *.....*
AMTC12I 00C435AC 030ADF38 00C436C8 00000000 C9C6C7F0 *... D. H. ... IFG0*
AMTC12I 00C435BC F2F0F0D5 8261A458 00000000 00001800 *200Nb. u. ....*

```

Legend:

1. First the LPA service is used to locate the start of IGGPOST0.
2. Then MEMSCAN is used to search common storage for the address of IGGPOST0.
3. Finally, the DUMP service is used to display the storage area containing the located address constant.

Example 2: To produce a memory map, type:

| | | | | | |
|--------------|-------------------------|----------|----------|---------|-------|
| mem ? | | | | | |
| AMTVSH1 | ALLOCATED STORAGE AREAS | | | | |
| AMTVSH2 | AREA TITLE | START | END | MEMSCAN | ABBR. |
| AMTVSLN | ----- | | | | |
| AMTVSAI | PSA | 00000000 | 00001000 | PSA | |
| AMTVSAI | PRIVATE | 00001000 | 007FFFFF | PVT | |
| AMTVSAI | CSA | 00800000 | 00B97FFF | CSA | |
| AMTVSAI | MLPA | 00B98000 | 00C2FFFF | MLPA | |
| AMTVSAI | PLPA | 00C30000 | 00EBDFFF | PLPA | |
| AMTVSAI | SQA | 00EBE000 | 00FC9FFF | SQA | |
| AMTVSAI | NUC R/W | 00FCA000 | 00FD9FFF | RWNUC | |
| AMTVSAI | NUC R/O | 00FDA000 | 00FFFFFF | RONUC | |
| AMTVSAI | EXT- NUC R/O | 01000000 | 01466FFF | ERONUC | |
| AMTVSAI | EXT- NUC R/W | 01467000 | 016D1FFF | ERWNUC | |
| AMTVSAI | EXTSQA | 016D2000 | 020AFFFF | ESQA | |
| AMTVSAI | EXT- PLPA | 020B0000 | 043B9FFF | EPLPA | |
| AMTVSAI | EXT- FLPA | 043BA000 | 043BCFFF | EFLPA | |
| AMTVSAI | EXT- MLPA | 043BD000 | 043D3FFF | EMLPA | |
| AMTVSAI | EXT- CSA | 043D4000 | 07FFFFFF | ECSA | |
| AMTVSAI | EXT- PRIVATE | 08000000 | 7FFFFFFF | EPVT | |

Example 3: To scan all storage for a hexadecimal string and display each occurrence, type:

```
mem x'00af72f8', dump, all
AMTVS8I SEARCHING FOR X'00AF72F8'
AMTVSWS WILL BE SCANNING: ALL STORAGE
AMTVSNN SCANNING: PSA 00000000-00001000
AMTVSNN SCANNING: PRIVATE 00001000-007FFFFF
AMTVSNN SCANNING: CSA 00800000-00B97FFF
AMTVS9I STRING FOUND AT 00AF7384 IN CSA @01
AMTVSLN -----
AMTVS5I 00AF7380 +04 F1000080 00AF72F8 00AF73B8 00AF73B8 *1 8 *
AMTVS5I 00AF7390 00000000 00000000 00000000 00000000 * *
AMTVS5I 00AF73A0 00000000 00000000 00000000 00000000 * *
AMTVS5I 00AF73B0 00000000 00000000 00AF9140 0751FE40 * j *
AMTVSNN SCANNING: MLPA 00B98000-00C2FFFF
AMTVSNN SCANNING: PLPA 00C30000-00EBDFFF
AMTVSNN SCANNING: SQA 00EBE000-00FC9FFF
AMTVSNN SCANNING: NUC R/W 00FCA000-00FD9FFF
AMTVSNN SCANNING: NUC R/O 00FDA000-00FFFFFF
AMTVSNN SCANNING: EXT-NUC R/O 01000000-01466FFF
AMTVSNN SCANNING: EXT-NUC R/W 01467000-016D1FFF
AMTVSNN SCANNING: EXT-SQA 016D2000-020AFFFF
AMTVS9I STRING FOUND AT 01B2E0AC IN EXT-SQA @02
AMTVSLN -----
AMTVS5I 01B2E0A0 +0C 01B2FFA0 AD626E17 01BD9130 00AF72F8 * > j 8*
AMTVS5I 01B2E0B0 00000080 8000A1E3 01B2E0A0 AD626E17 * T : > *
AMTVS5I 01B2E0C0 01BD9130 00AF72B8 00000040 8000A0DB * j *
AMTVS5I 01B2E0D0 01AFA1F0 AD6300B7 01A84958 07624020 * 0 y *
AMTVSNN SCANNING: EXT-PLPA 020B0000-043B9FFF
AMTVSNN SCANNING: EXT-FLPA 043BA000-043BCFFF
AMTVSNN SCANNING: EXT-MLPA 043BD000-043D3FFF
AMTVSNN SCANNING: EXT-CSA 043D4000-07FFFFFFF
AMTVSNN SCANNING: EXT-PRIVATE 08000000-7FFFFFFF
AMTVSSI SEARCH STOPPED AT THE END OF THE AREA (7FFFFFFF)
```

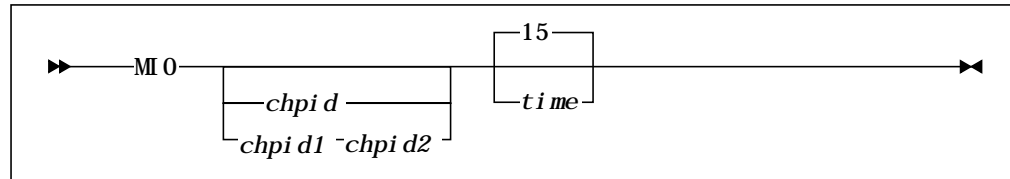
Usage Notes

- You can omit previously typed parameters if you do not want to change them. For example, if you had previously typed MEMSCAN TEXT PRIVATE (which searches for the string TEXT in private storage), you can search for the string TEXT in common storage by typing MEMSCAN, , COMMON.
- The ATTENTION key interrupts MEMSCAN and saves all current values. The scan can be resumed at the point of interruption by typing MEMSCAN REFI ND or just MEMSCAN.
- Do not embed blanks in the search string.

MIO

The MIO service monitors the overall performance of the entire I/O subsystem, or a subset thereof, to detect I/O bottlenecks causing workload delays. This service provides workload (address-space-related) information, which lets you detect jobs monopolizing specific devices and channel paths.

Syntax



where

chpi d Is a channel path identifier.

chpi d1 - chpi d2 Is a range of channel path identifiers; *chpi d1* is the lowest channel path identifier and *chpi d2* is the highest channel path identifier.

time Specifies the length of the sample period in seconds. The default sample period is 15 seconds.

Note: If you do not specify *chpi d*, the MIO service monitors all channel paths attached to all processors.

Examples

To display information on all channel paths, type:

```

m i o
AMT030I I/O DATA BEING GATHERED

AMT031I CHANNEL PATH UTILIZATION REPORT
          ①      ②      ③
AMT032I CHANNEL PATH 00 (BYTE) WAS 5% BUSY
AMT032I CHANNEL PATH 03 (BLOCK) WAS 23% BUSY
AMT032I CHANNEL PATH 12 (BLOCK) WAS 45% BUSY
AMT032I CHANNEL PATH 23 (BLOCK) WAS 17% BUSY

AMT033I PROCESSOR I/O INTERRUPT ACTIVITY REPORT
          ④      ⑤      ⑥
AMT034I CPU 00 PROCESSED 3187 INTERRUPTS ( 12% WERE THROUGH TPI)
AMT034I CPU 02 PROCESSED 110 INTERRUPTS ( 11% WERE THROUGH TPI)

AMT035I DEVICE AND LOGICAL CONTROL UNIT REPORT
          ⑦      ⑧      ⑨      ⑩      ⑪      ⑫      ⑬      ⑭      ⑮      ⑯
AMT036D -----
AMT036H DEV VOLSER %BSY QLTH SEEK ACYL RATE CONN PEND DISCT
AMT036I 262 SPOOL1 20 .34 180 149 6 2 4 15
AMT038D -----
          ⑰      ⑱
AMT038H ASI DNAME ASID %BSY
AMT038I WKR1 85 33
AMT038I INIT 24 22
AMT038I JES2 13 11
AMT038I CMR8 77 33
AMT038I ***** 54 2
AMT038I DAD2 70 4
AMT038I *OTHERS* 96 2
AMT038I *OTHERS* 96 2
          ⑳      ㉑      ㉒      ㉓      ㉔      ㉕
AMT039I LCU 07: I/O RATE 5/SEC %OK 73 %DEFER 14/ 38 AQD 1

```

Legend:

1. Channel path identifier (CHPID).
2. Type of channel path as specified during IOCP generation. The valid path types are BLOCK, for block multiplexing paths, and BYTE, for byte multiplexing paths.
3. Percentage of time the channel path was busy during the sample period.

Note: Channel paths less than 1 percent busy during the sample period are not reported unless specified either explicitly or implicitly (using a path-range) as an operand of the MIO service.

4. CPU identifier (CPUID) for the processor whose activity is being reported.
5. Total number of I/O interrupts (including TPIs) processed by this CPU in the sample period.
6. Percentage of I/O interrupts processed by this CPU that did not require a physical PSW swap (that is, were processed through the Test Pending Interrupt (TPI) instruction).

7. Device number whose activity was measured.
8. Volume serial number of the device measured.
9. Percentage of time an I/O request was active for the device.
10. Average number of I/O requests queued by the I/O supervisor for the device.
11. Total number of head movements observed for the device during the sample period (N/A for non-DASD and fixed-head devices).
12. Average number of cylinders moved for each seek observed for the device.
13. Number of I/O requests per second addressed to this device.
14. Average time (in milliseconds) the device was connected to a channel path on a per-request basis.
15. Average time (in milliseconds) each request was held, pending availability of a waiting for path, device, or control unit.
16. Average time (in milliseconds) the device was disconnected from the channel path pending a device or control unit function (seek) on a per-request basis.
17. Name of an address space found to be a significant user of the device. ***** in this field indicates that the address space terminated between the time the data was collected and the time the MDEVICE report was generated. *OTHERS* in this field indicates that the address space had more users during the sample period than could be listed. All activity for the overflow of users is reported as *OTHERS*.
18. Number of the address space found to be a significant user of the device.
19. Percentage of the device busy time that this address space was requesting the device.
20. Number of the logical control unit with which all the devices reported above (back to the previous LCU report line) are associated.
21. Total number of I/O requests per second received for all devices associated with the LCU.
22. Percentage of I/O requests processed by this LCU initiated successfully.
23. Percentage of I/O requests processed by this LCU that were deferred because of a busy physical control unit.
24. Percentage of I/O requests processed by this LCU that were deferred because of a busy physical device.
25. Average number of I/O requests held (queued) by this LCU pending channel path, physical control unit, or device availability.

Usage Note

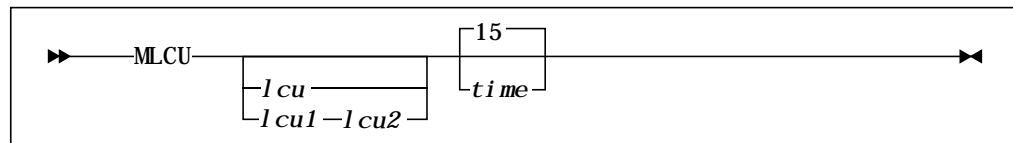
The MIO service uses a sampling technique for measuring I/O activity. The default sampling period is 15 seconds at a rate of 4 samples per second. If you enter an override value for `time`, the sample rate is 4 samples per second if the period is 15 seconds or less and 2 samples per second if the period is greater than 15 seconds.

MLCU

The MLCU (MLC) service monitors the performance and utilization of logical control units configured into the I/O subsystem. The service displays data (I/O rate, requests deferred for control-unit, and device busy conditions) for logical control units that have I/O activity during the monitoring period.

Use this service to determine the optimal physical device placement and to evaluate shared DASD contention.

Syntax



where

l cu Is a logical control unit

l cu1-l cu2 Is a range of logical control units; *l cu1* is the lowest-numbered logical control unit and *l cu2* is the highest-numbered logical control unit.

t i me Specifies the length of the sample period in seconds. The default sample period is 15 seconds.

Example 1 (For Processors Older than 3090)

To monitor all LCUs for 15 seconds, type:

| | | | | | | | | | |
|--|----------|----------|----------|-----|----------|--------|----------|----------|----------|
| ml cu | | | | | | | | | |
| AMT040I LOGICAL CONTROL UNIT DATA BEING GATHERED | | | | | | | | | |
| AMT041I LOGICAL CONTROL UNIT ACTIVITY REPORT | | | | | | | | | |
| | ① | | ② | | ③ | | ④ | ⑤ | ⑥ |
| AMT039I | LCU 03: | I/O RATE | 5/SEC | %OK | 87 | %DEFER | 2/ | 11 | AQD 1 |
| AMT039I | LCU 07: | I/O RATE | 3/SEC | %OK | 93 | %DEFER | 5/ | 2 | AQD 1 |
| AMT039I | LCU 1A: | I/O RATE | 23/SEC | %OK | 81 | %DEFER | 9/ | 10 | AQD 3 |
| AMT039I | LCU 21: | I/O RATE | 48/SEC | %OK | 44 | %DEFER | 39/ | 17 | AQD 5 |
| AMT039I | LCU 2F: | I/O RATE | 9/SEC | %OK | 73 | %DEFER | 14/ | 13 | AQD 2 |

Legend:

1. Logical control unit number.
2. Total number of I/O requests/second received for devices associated with the LCU.
3. Percentage of I/O requests processed by this LCU that were initiated successfully.
4. Percentage of I/O requests deferred because of a busy physical control unit.

5. Percentage of I/O requests processed by this LCU that were deferred because of a physical device busy condition.
6. Average number of I/O requests that were held (queued) by this LCU pending channel path, physical control unit, or device availability.

Example 2 (For Processors Older than 3090)

To monitor LCUs from 0 to 2E for 5 seconds, type:

```
ml cu 000-02E 5
AMT040I LOGICAL CONTROL UNIT DATA BEING GATHERED

AMT041I LOGICAL CONTROL UNIT ACTIVITY REPORT
AMT063I IOP 00: ACTIVITY RATE 512 AVG Q LENGTH .02
AMT063I IOP 01: ACTIVITY RATE .00 AVG Q LENGTH .00
AMT061I LCU 0013 CONTENTION RATE 2 ALL PATHS BUSY 0 %SWITCH BUSY 0
AMT062I LCU 0013 DELAY Q LENGTH .66 CHPID TAKEN 1 %CU BUSY 37
AMT061I LCU 001A CONTENTION RATE .00 ALL PATHS BUSY 0 %SWITCH BUSY 0
AMT062I LCU 001A DELAY Q LENGTH .00 CHPID TAKEN .60 %CU BUSY 0
AMT061I LCU 001D CONTENTION RATE .00 ALL PATHS BUSY 20 %SWITCH BUSY 0
AMT062I LCU 001D DELAY Q LENGTH .00 CHPID TAKEN 21 %CU BUSY 0
AMT061I LCU 0024 CONTENTION RATE .00 ALL PATHS BUSY 0 %SWITCH BUSY 0
AMT062I LCU 0024 DELAY Q LENGTH .00 CHPID TAKEN 59 %CU BUSY 0
AMT061I LCU 0029 CONTENTION RATE .00 ALL PATHS BUSY 0 %SWITCH BUSY 3
AMT062I LCU 0029 DELAY Q LENGTH .00 CHPID TAKEN 111 %CU BUSY 2
AMT061I LCU 002E CONTENTION RATE .00 ALL PATHS BUSY 0 %SWITCH BUSY 0
AMT062I LCU 002E DELAY Q LENGTH .00 CHPID TAKEN 129 %CU BUSY 0
```

Example 3 (For 3090 And Newer Processors)

To monitor all LCUs for 15 seconds, type:

```
ml cu
AMT040I LOGICAL CONTROL UNIT DATA BEING GATHERED

AMT041I LOGICAL CONTROL UNIT ACTIVITY REPORT
AMT063I IOP 01: ACTIVITY RATE 0000 AVG Q LENGTH 0000
AMT061I LCU 023: CONTENTION RATE 0005 ALL PATHS BUSY 0001
AMT062I LCU 023: DELAY Q LENGTH 0000 CHPID TAKEN 0000 % CU BUSY 0000
```

Legend:

1. Total number of I/O requests per second received for all devices associated with the LCU.
2. Average depth of the I/O request queue.
3. Rate at which I/Os were queued on the LCU in the I/O subsystem.
4. Percentage of time that all paths to a given I/O device on that LCU were busy.
5. Average length of the queue for the LCU.

6. Percentage of I/O requests processed by this LCU that were initiated successfully.
7. Percentage of I/O requests processed by this LCU that were deferred because of a busy physical control unit.

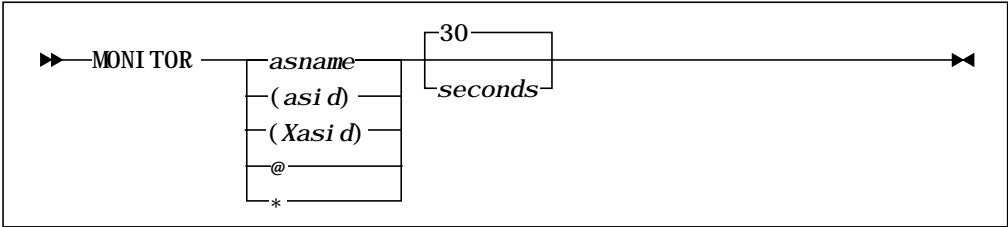
Usage Note

The MLCU service uses a sampling technique for measuring I/O activity. The default sampling period is 15 seconds at a rate of 4 samples per second. If you enter an override value for `time`, the sample rate is 4 samples per second if the period is 15 seconds or less and 2 samples per second if the period is greater than 15 seconds.

MONITOR

The MONITOR (MON) service monitors address space activity to determine whether an address space is in a wait or a looping state. The service provides the basis for a deadline management system by providing CPU time and EXCP counts for the life of a step. For a job whose characteristics are known, you can gauge the progress of a step at any point during its execution.

Syntax



where

| | |
|-----------------|---|
| <i>aname</i> | Is the address space name. |
| <i>(asi d)</i> | Is the address space identifier in decimal format. |
| <i>(Xasi d)</i> | Is the address space identifier in hexadecimal format. |
| @ | Specifies your own address space. |
| * | Specifies the last address space entered. |
| <i>seconds</i> | Is the number of seconds the address space is to be monitored; the default is 30 seconds. |

Example

To monitor address space INVENTORY for 30 seconds, type:

```
monitor inventory
AMTJ22I STATISTICS BEING GATHERED FOR INVENTORY
AMTJ21I 1 JOB 295 2 INVENTORY 3 STEP1 4 PRTY EE(238) 5 PGP 22/2
AMTJ23I AMTJ23I LIFE OF STEP TOTAL CPU 26.33 EXCP 1233 PAGES 8 SUN 10300
AMTJ24I 7 LAST 30 SECOND 8 CPU 3.95 EXCP 9 70 PAGES 0 10 SUN 500
```

Legend:

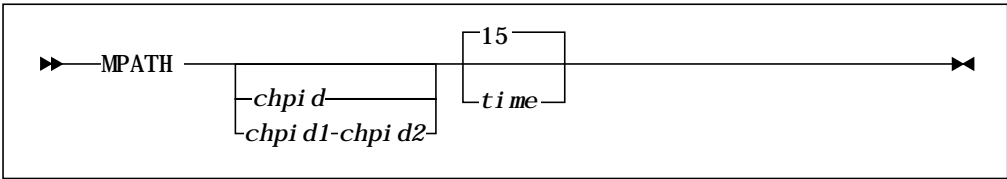
- 1. JES job ID.
- 2. Address space name.
- 3. Current stepname.
- 4. Priority.

5. Performance group.
6. Performance period.
7. CPU time for the life of the step during the time specified.
8. Count of EXCPs for the life of the step during the time specified.
9. Total number of page actions during the step during the time specified.
10. Total service units for the step during the time specified.

MPATH

The MPATH (MPA) service monitors I/O channel path activity. This service also detects imbalances and possible path failures by monitoring the utilization of all, or a subset of, the channel paths installed in the system.

Syntax



where

- chpi d* Is a channel path identifier.
 - chpi d1- chpi d2* Is a range of channel path identifiers; *chpi d1* is the lowest channel path identifier and *chpi d2* is the highest channel path identifier.
 - time* Specifies the length of the sample period in seconds. The default sample period is 15 seconds.
- Note:** If you do not specify *chpi d*, the MPATH service monitors all channel paths attached to all processors.

Example

To display I/O activity for all channel paths, type:

```
mpath
      ①      ②
AMT021I CHANNEL PATH 0C WAS 4% BUSY
AMT021I CHANNEL PATH 12 WAS 1% BUSY
AMT021I CHANNEL PATH 13 WAS 1% BUSY
AMT021I CHANNEL PATH 1B WAS 13% BUSY
AMT021I CHANNEL PATH 1C WAS 7% BUSY
AMT021I CHANNEL PATH 38 WAS 14% BUSY
AMT021I CHANNEL PATH 39 WAS 19% BUSY
AMT021I CHANNEL PATH 3C WAS 19% BUSY
AMT021I CHANNEL PATH 3D WAS 11% BUSY
```

To display I/O activity for channel paths 12–14, type:

```
mpath 12-14
      ①      ②
AMT021I CHANNEL PATH 12 WAS 4% BUSY
AMT021I CHANNEL PATH 13 WAS 3% BUSY
AMT021I CHANNEL PATH 14 WAS 0% BUSY
```

To display I/O activity for all channel paths over the past 60 seconds, type:

mpa, , 60

| | | | | ¹ | ² | |
|---------|---------|------|----|--------------|--------------|------|
| AMT021I | CHANNEL | PATH | 0C | WAS | 4% | BUSY |
| AMT021I | CHANNEL | PATH | 12 | WAS | 3% | BUSY |
| AMT021I | CHANNEL | PATH | 13 | WAS | 3% | BUSY |
| AMT021I | CHANNEL | PATH | 14 | WAS | 4% | BUSY |
| AMT021I | CHANNEL | PATH | 1B | WAS | 5% | BUSY |
| AMT021I | CHANNEL | PATH | 1C | WAS | 5% | BUSY |
| AMT021I | CHANNEL | PATH | 1E | WAS | 4% | BUSY |
| AMT021I | CHANNEL | PATH | 38 | WAS | 5% | BUSY |
| AMT021I | CHANNEL | PATH | 39 | WAS | 11% | BUSY |
| AMT021I | CHANNEL | PATH | 3C | WAS | 11% | BUSY |
| AMT021I | CHANNEL | PATH | 3D | WA | 6% | BUSY |

Legend:

1. Channel path identifier (CHPID).
2. Percentage of time the channel path was busy during the sample period.

Usage Note

The MPATH service uses a sampling technique for measuring I/O activity. The default sampling period is 15 seconds at a rate of 10 samples per second. If you enter an override value for `time`, the sample rate is 10 samples per second if the period is 15 seconds or less and 5 samples per second if the period is greater than 15 seconds.

MSTORAGE

The MSTORAGE (MS) service maps virtual storage areas above and below the 16MB line, including location, length and percentage used when applicable. Areas common to all address spaces and private area locations specific to the specified address space are displayed, when available.

The private area above and below the 16MB line is divided into three sections:

- LSQA/SWA—allocated from the top of the private area down
- User committed private area—allocated from the bottom up
- Uncommitted area—in-between the LSQA/SWA and user committed private area

The current utilization within the LSQA/SWA and committed private area is displayed. LSQA/SWA may expand into the uncommitted area as needed. The committed private area may expand into the uncommitted private area to the user limit value.

Syntax



where

- | | |
|-----------------|--|
| <i>asname</i> | Is the address space name. |
| <i>(asi d)</i> | Is the address space identifier in decimal format. |
| <i>(Xasi d)</i> | Is the address space identifier in hexadecimal format. |
| @ | Specifies your own address space. |
| * | Specifies the last address space entered. |

Example

| AMTMSOI Address space: BMVDWP3 ① | | | | | | | |
|----------------------------------|---------------------|----------|-----------|------------|-------|---------|-----------|
| AMTMSI | AREA ② | START ③ | END ④ | LENGTH ⑤ | (K) ⑥ | %USED ⑦ | USER LMT |
| AMTMS2I | | | | | | | |
| AMTMS3I | Ext LSQA/SWA | 7F6C8000 | 7FFFFFFF | 9,440K | | 99 | |
| AMTMS3I | Uncommitted Ext-Pvt | 11A8A000 | 7F6C7FFF | 1,798,392K | | --- | 139FFFFFF |
| AMTMS3I | Committed Ext-Pvt | 11A00000 | 11A89FFF | 552K | | 77 | |
| AMTMS3I | Ext CSA | 051D0000 | 119FFFFFF | 204,992K | | 28 | |
| AMTMS3I | Ext MLPA | 051BA000 | 051CFFFF | 88K | | --- | |
| AMTMS3I | Ext FLPA | 051B7000 | 051B9FFF | 12K | | --- | |
| AMTMS3I | Ext PLPA | 0271A000 | 051B6FFF | 43,636K | | --- | |
| AMTMS3I | Ext SQA | 01898000 | 02719FFF | 14,856K | | 82 | |
| AMTMS3I | Ext NUC R/W | 01596000 | 01897FFF | 3,080K | | --- | |
| AMTMS3I | Ext NUC R/O | 01000000 | 01595FFF | 5,720K | | --- | |
| AMTMS4I | 16 MEG LINE | | | | | | |
| AMTMS3I | NUC R/O | 00FDB000 | 00FFFFFF | 148K | | --- | |
| AMTMS3I | NUC R/W | 00FC9000 | 00FDAFFF | 72K | | --- | |
| AMTMS3I | SQA | 00EBA000 | 00FC8FFF | 1,084K | | 50 | |
| AMTMS3I | PLPA | 00C0D000 | 00EB9FFF | 2,740K | | --- | |
| AMTMS3I | MLPA | 00B8A000 | 00C0CFFF | 524K | | --- | |
| AMTMS3I | CSA | 00800000 | 00B89FFF | 3,624K | | 93 | |
| AMTMS3I | LSQA/SWA | 0075A000 | 007FFFFFF | 664K | | 54 | |
| AMTMS3I | Uncommitted Private | 0005F000 | 00759FFF | 7,148K | | --- | 00414FFF |
| AMTMS3I | Committed Private | 00005000 | 0005EFFF | 360K | | 104 | |
| AMTMS3I | V=R (IF ANY) | 00005000 | 00024FFF | 128K | | --- | |
| AMTMS3I | Syste | | | | | | |

Legend:

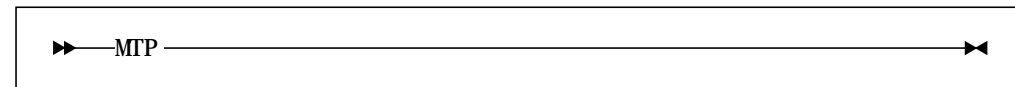
1. Name of the address space.
2. Name of the virtual storage area.
3. Lowest virtual storage address for this storage area.
4. Highest virtual storage address for this storage area.
5. Number of kilobytes contained in this storage area.
6. Percent of the area in use, where available.
7. Region limit value.

MTP

The MTP service

- Displays volume serial numbers, device numbers, device types, and address space names for tape and direct access storage devices that have pending mount requests
- Identifies the source of the malfunction when an address space stops processing
- Finds which address space requests a particular volume

Syntax



Example

To identify pending mount requests, type:

```
mtp
AMTM22I      MOUNT PENDING FOR B90078 UNIT= 384 (3400-4) JOB= GJJ$RUN
```

Legend:

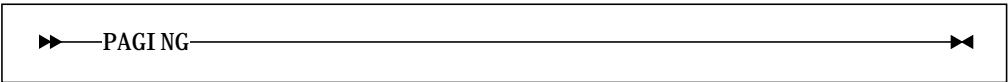
1. Volume serial number of the requested volume.
2. Number of the device that requires the volume mount.
3. Device type.
4. Name of the address space requesting the unmounted volume.

Note: Only volume serials requested by allocation appear in message AMTM22I. The second and successive volumes of a data set appear as blanks in message AMTM22I.

PAGING

The PAGING (PAG) service is the paging monitor for the MVS system. This service provides the total paging rate and divides the total paging rate into its components for analysis. It also provides the page reclaim rate.

Syntax



Example

To display paging information, type:

| | | | |
|----------------|-------------------|-------------------------------|--------------------------------------|
| pagi ng | | | |
| AMTP11I | TOTAL PAGING RATE | ¹ 26. 75 PAGES/SEC | ² FOR LAST 65. 25 SECONDS |
| AMTP12I | DEMAND PAGING | 10. 05 PAGES/SEC | |
| AMTP13I | VIO PAGING RATE | ³ 3. 60 PAGES/SEC | |
| AMTP14I | SWAP PAGING RATE | ⁴ 9. 75 PAGES/SEC | |
| AMTP15I | LPA PAGING RATE | ⁵ 3. 79 PAGES/SEC | |
| AMTP16I | CSA PAGING RATE | ⁶ 6. 44 PAGES/SEC | |
| AMTP17I | PAGE RECLAIM RATE | ⁷ 2. 50 PAGES/SEC | |

Legend:

- 1. Total system paging rate over the last data collection interval; total system paging is the sum of VIO paging operations (in and out), swapping operations, and all other paging operations (excluding CSA paging and page reclaims).
- 2. Duration of the last data collection interval.
- 3. Paging rate caused by virtual I/O.
- 4. Paging rate caused by swapping.
- 5. Paging rate in the system link-pack-area (LPA).
- 6. Paging rate in the common service area (CSA).
- 7. Page reclaim rate.

Usage Note

The period for which paging data is reported may vary, based on the time the paging activity counters were last cleared.

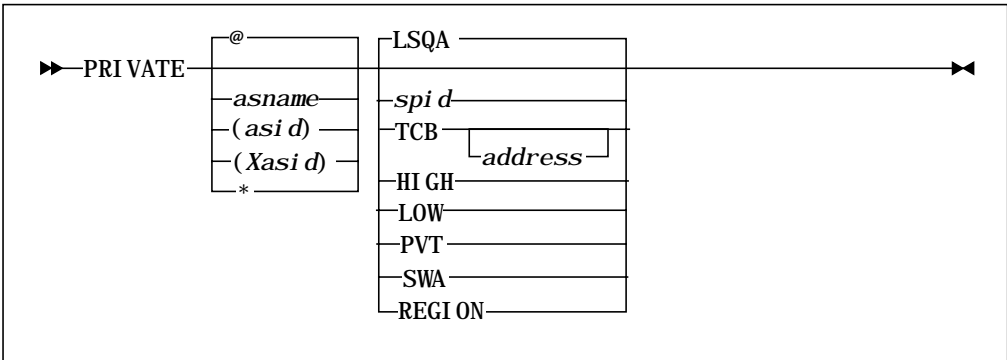
PRIVATE

The PRIVATE (PRI or PVT) service summarizes virtual storage allocations for private storage in an address space and displays an overview of subpool allocations within a private address space.

Use the PRIVATE service to

- Display allocated storage and fragmented free space by subpool and key
- Debug applications that use excessive private storage
- Tune virtual storage constrained systems
- Monitor virtual storage use within an address space

Syntax



where

| | |
|----------|---|
| @ | Specifies your own address space; the default. |
| asname | Is the address space name. |
| (asi d) | Is the address space identifier in decimal format. |
| (Xasi d) | Is the address space identifier in hexadecimal format. |
| * | Specifies the last address space entered. |
| LSQA | Displays a detailed report of allocations in the Local System Queue Area, which consists of subpools 205, 215, 225, 236 and 255; the default. |
| spi d | Is a 3-digit decimal subpool identifier in the range between 0 and 255. |
| TCB | Displays a summary of the storage allocated by all tasks in the address space. |
| address | Is the address of the TCB for which you want to display a detailed report of storage allocations. |
| HIGH | Displays a summary of subpools located in private high storage. |

| | |
|--------|---|
| LOW | Displays a summary of subpools located in private low storage. |
| PVT | Displays a summary of subpools 0–127, 129–132, 229, 230, 236, 237, 251, and 252. |
| SWA | Displays a detailed report of allocations in the Scheduler Work Area, which consists of subpools 237 and 238. |
| REGION | Lists regions for the specified address space. |

Examples

To determine LSQA usage for address space INVENTORY, type:

| private inventory | | | | | | | | | | |
|-------------------|-----------------------------|-------|----------------------------------|---|---|---|---|---|---|-----------|
| ① | | | ② | | | | | | | |
| AMTPR8I | SUMMARY OF LSQA | | STORAGE FOR INVENTORY BY SUBPOOL | | | | | | | |
| AMTPR9I | SP , TYPE/KEY | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8-F TOTAL |
| AMTPRBI | 255, ALLOC | 240K | | | | | | | | 240K ③ |
| AMTPRBI | FFS | 7K | | | | | | | | 7K ④ |
| AMTPRCI | EXTENDED PRIVATE..... | | | | | | | | | |
| AMTPRBI | 205, ALLOC | 4K | | | | | | | | 4K |
| AMTPRBI | FFS | | | | | | | | | 0K |
| AMTPRBI | 215, ALLOC | 284K | | | | | | | | 284K |
| AMTPRBI | FFS | 3K | | | | | | | | 3K |
| AMTPRBI | 225, ALLOC | 16K | | | | | | | | 16K |
| AMTPRBI | FFS | 8K | | | | | | | | 8K |
| AMTPRBI | 255, ALLOC | 8648K | | | | | | | | 8648K |
| AMTPRBI | FFS | 1K | | | | | | | | 1K |
| AMTPRDI | ----- TOTALS ----- | | | | | | | | | |
| AMTPRTI | TOT, ALLOC | 9192K | | | | | | | | 9192K ⑤ |
| AMTPRTI | FFS | 19K | | | | | | | | 19K ⑥ |

Legend:

1. Type of private storage information displayed.
2. Address space name for which private storage information is displayed.
3. Amount of allocated storage, both above and below the 16M line, for a subpool within the key.
4. Amount of fragmented free space, both above and below the 16M line, within the allocated storage for a subpool within the key.
5. Total amount of allocated storage for the address space by subpool and key.
6. Total amount of fragmented free space within allocated storage for the address space by subpool and key.

To summarize storage allocations by subpool and key for all TCBs belonging to address space INVENTORY, type:

| private inventory tcb | | | | | | | |
|--|-------|-------------|--------------|--------------|-------|------|-------|
| AMTPRBI SUMMARY OF PRIVATE STORAGE FOR INVENTORY BY TCB, SUBPOOL AND KEY | | | | | | | |
| AMTPRBI | | | | | | | |
| AMTPRWI | # 1 | TCB=7FE158, | RB=007FDC58, | PGM=IEAVAR00 | | | |
| AMTPRVI ===== | | | | | | | |
| AMTPRHI | SP | KEY | ABOVE | | BELOW | | OWNER |
| AMTPRLI | | | ALLOC | FFS | ALLOC | FFS | |
| AMTPRBI | 229 | 0 | 24K | | | | OWN |
| AMTPRBI | 230 | 0 | 60K | 6K | 8K | 2K | OWN |
| AMTPRBI ----- | | | | | | | |
| AMTPRBI | TOTAL | | 84K | 6K | 8K | 2K | |
| AMTPRBI | | | | | | | |
| AMTPRWI | # 2 | TCB=7FF7C0, | RB=007F3D60, | PGM=IEFSD060 | | | |
| AMTPRVI ===== | | | | | | | |
| AMTPRHI | SP | KEY | ABOVE | | BELOW | | OWNER |
| AMTPRLI | | | ALLOC | FFS | ALLOC | FFS | |
| AMTPRBI | 0 | 0 | | | 4K | 2K | SHR |
| AMTPRBI | 229 | 0 | 4K | 3K | 36K | 6K | OWN |
| AMTPRBI | 230 | 0 | 468K | 21K | 56K | 15K | OWN |
| AMTPRBI | 236 | 0 | 628K | 33K | 104K | 16K | SHR |
| AMTPRBI | 237 | 0 | 636K | 33K | 124K | 21K | OWN |
| AMTPRBI | 252 | 0 | 636K | 33K | 128K | 24K | OWN |
| AMTPRBI ----- | | | | | | | |
| AMTPRBI | TOTAL | | 2372K | 123K | 452K | 84K | |
| AMTPRBI | | | | | | | |
| AMTPRWI | # 3 | TCB=7FF228, | RB=007FF128, | PGM=IKJEFT01 | | | |
| AMTPRVI ===== | | | | | | | |
| AMTPRHI | SP | KEY | ABOVE | | BELOW | | OWNER |
| AMTPRLI | | | ALLOC | FFS | ALLOC | FFS | |
| AMTPRBI | 0 | 0 | | | 4K | 2K | SHR |
| AMTPRBI | 1 | 0 | 12K | 5K | 8K | 3K | SHR |
| AMTPRBI | 2 | 0 | | | 4K | 3K | OWN |
| AMTPRBI | 78 | 0 | 124K | 7K | 84K | 12K | SHR |
| AMTPRBI | 230 | 0 | 44K | 7K | 56K | 6K | OWN |
| AMTPRBI | 236 | 0 | 204K | 19K | 104K | 7K | SHR |
| AMTPRBI | 251 | 0 | 300K | 47K | 280K | 34K | OWN |
| AMTPRBI | 252 | 0 | 500K | 52K | 480K | 43K | OWN |
| AMTPRBI ----- | | | | | | | |
| AMTPRBI | TOTAL | | 1184K | 137K | 1020K | 110K | |

Legend:

1. Address of TCB.
2. Address of current RB.
3. Name of program running under the current RB.
4. Subpool number.
5. Key.
6. Whether subpool is owned (OWN) or shared (SHR).

7. Amount of storage allocated above the 16MB line.
8. Amount of free space above the 16MB line.
9. Amount of storage allocated below the 16MB line.
10. Amount of free space below the 16MB line.
11. Total of all allocated and free storage for the TCB, in all subpools and keys.

To display storage allocations by subpool and key for the specific TCB at location 7FE158, type;

| private inventory tcb 7fe158 | | | | | | | |
|---|----------|---------|----------|----------|----------|----------|-------------------|
| AMTPRFI PRIVATE STORAGE FOR TCB AT 7FE158 BY SUBPOOL AND KEY, AS: INVENTORY | | | | | | | |
| AMTPRBI | | | | | | | |
| AMTPRKI | SP=229 | KEY= 0 | OWN | | | | |
| AMTPRBI | | | | | | | |
| AMTPRMI | ADDRESS | LENGTH | DATA | | | | |
| AMTPRNI | 7FFD0000 | 0001000 | E4C2C640 | 00000000 | 00000000 | 00000000 | *UBF * |
| AMTPRNI | | | 00000000 | 00000000 | 10000000 | 00000000 | *..... * |
| AMTPRNI | 7FFD2000 | 0001000 | E4C2C640 | 00000000 | 00000000 | 00000000 | *UBF * |
| AMTPRNI | | | 00000000 | 00000000 | 10000000 | 00000000 | *..... * |
| AMTPRNI | 7FFD4000 | 0001000 | E4C2C640 | 00000000 | 00000000 | 00000000 | *UBF * |
| AMTPRNI | | | 00000000 | 00000000 | 10008000 | 00000000 | *..... * |
| AMTPRBI | | | | | | | |
| AMTPRKI | SP=229 | KEY= 0 | OWN | | | | |
| AMTPRBI | | | | | | | |
| AMTPRMI | ADDRESS | LENGTH | DATA | | | | |
| AMTPRNI | 7FFCA000 | 0001000 | D7C2C640 | 00000000 | 00000000 | 00000000 | *PBF * |
| AMTPRNI | | | 00000000 | 00000000 | 10000400 | 00000000 | *..... * |
| AMTPRNI | 7FFD1000 | 0001000 | D7C2C640 | 00000000 | 00000000 | 00000000 | *PBF * |
| AMTPRNI | | | 00000000 | 00000000 | 10000400 | 00000000 | *..... * |
| AMTPRNI | 7FFD3000 | 0001000 | D7C2C640 | 00000000 | 00000000 | 00000000 | *PBF * |
| AMTPRNI | | | 00000000 | 00000000 | 10000000 | 00000000 | *..... * |
| AMTPRBI | | | | | | | |
| AMTPRKI | SP=230 | KEY= 0 | OWN | | | | |
| AMTPRBI | | | | | | | |
| AMTPRMI | ADDRESS | LENGTH | DATA | | | | |
| AMTPRNI | 7F6EC000 | 0001000 | E6001000 | 00000000 | 03C40000 | 00000000 | *W.....D.... * |
| AMTPRNI | | | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | 7F720000 | 0002000 | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | | | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | 7F722000 | 0001000 | E6000A00 | 00000000 | 02AF0000 | C01E0000 | *W..... * |
| AMTPRNI | | | 00000000 | 0000E2E8 | E2C2E3E2 | D6400005 | *.....SYSBTS0.. * |
| AMTPRBI | | | | | | | |
| AMTPRKI | SP=230 | KEY= 0 | OWN | | | | |
| AMTPRBI | | | | | | | |
| AMTPRMI | ADDRESS | LENGTH | DATA | | | | |
| AMTPRNI | 007EF000 | 0001000 | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | | | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | 007F0000 | 0001000 | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | | | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | 7F6E9000 | 0001000 | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | | | 00000000 | 00000000 | 00000000 | 00000000 | *..... * |
| AMTPRNI | 7FFD5000 | 0002000 | E2E3D6D9 | 00000000 | 00001000 | C7C4C140 | *STOR.....GDA * |
| AMTPRNI | | | 7FFD5000 | 7FFD5120 | 00000EE0 | 7FFD5000 | *..... * |
| AMTPRNI | 7FFDA000 | 0002000 | D1C5E2F2 | 40E3D9C5 | 40C3D7D6 | D6D34040 | *JES2 TRE CP00L * |
| AMTPRNI | | | 40404040 | 40404040 | 0000015A | 7FFDA4C0 | *..... * |

Legend:

1. Address to which the TCB belongs.
2. Subpool number.
3. Key.

4. Whether subpool is owned (OWN) or shared (SHR).
5. Address of storage block allocated by the TCB in the subpool and key.
6. Length of storage block.
7. First 32 bytes of storage block.
8. Character representation of storage block.

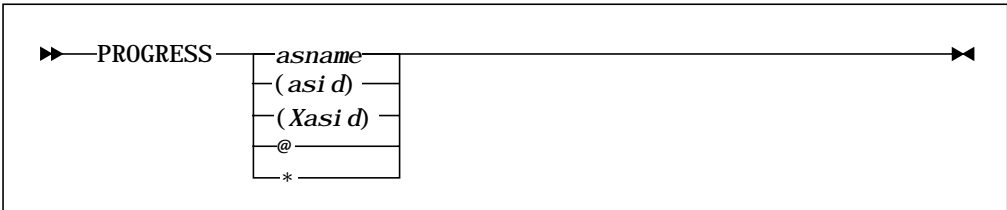
To list the regions for address space INVENTORY, type:

```
private inventory region
AMTPR1I LIST OF REGIONS FOR PRIVATE ADDRESS SPACE INVENTORY
AMTPR2I REGION      ADDRESS      LENGTH
AMTPRBI RCT         00001000      00004000
AMTPRBI V=V         00005000      007FB000
AMTPRBI E V=V       05800000      7A800000
```

PROGRESS

The PROGRESS (PRO) service displays the status and current step information for a specified address space. It also displays how the number of steps in a job is reached. This service lets you determine how long an address space or step has been running.

Syntax



where

- asname* Is the address space name.
- (asi d)* Is the address space identifier in decimal format.
- (Xasi d)* Is the address space identifier in hexadecimal format.
- @ Specifies your own address space.
- * Specifies the last address space entered.

Example

To display the progress of jobs in address space INVENTORY, type:

| progress inventory | | | | | | | | | | | | | |
|--------------------|-------------------|------------|-----------|---------|------------|-----------|------|-----------|----|---|--|--|--|
| ① | | | ② | | ③ | | ④ | | | | | | |
| AMTP90I | JOB | 965 | INVENTORY | IEFPROC | PRTY | EO (224) | PGP | 1/1 | | | | | |
| AMTP93I | MSGCLASS | : | | | A | MSGLEVEL | : | (2, 0) | ⑤ | | | | |
| AMTP97I | PROGRAM | : | | | DFSMVRCO | PGMR NAME | : | **BOOLE** | ⑥ | | | | |
| AMTP91I | JOB START DATE | : | | | 90058 | | | | | | | | |
| AMTP92I | ADDR SPACE START: | 17: 02: 44 | | | JOB CLASS | : | P | ⑦ | | | | | |
| AMTP94I | STEP START | : | | | 17: 02: 44 | STEP NO. | : | 1/ 2 | ⑧ | | | | |
| | | | | | | | | | | | | | |
| AMTP95I | STEP TCB TIME | : | 19. 36 | | | SRB TIME | : | 2. 23 | ⑨ | | | | |
| AMTP98I | STEP TOTAL CPU | : | 21. 59 | | | CPU LIMIT | : | 1800. 40 | 1% | ⑩ | | | |
| AMTP96I | REGION REQUESTED: | 2048K | | | EXTENDED | : | 572K | ⑪ | | | | | |
| AMTP9CI | CURRENT USE <16M: | 552K | | | EXTENDED | : | 8K | ⑫ | | | | | |
| AMTP9DI | MAX USED | <16M: | 2. 058M | | | EXTENDED | : | 10. 08M | ⑬ | | | | |

Legend:

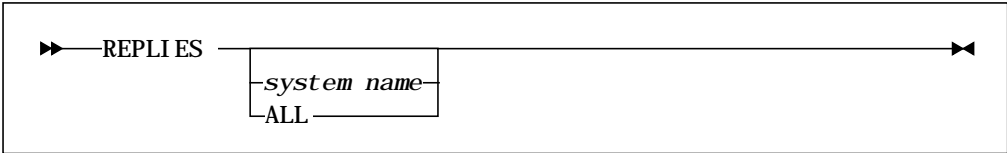
- 1. JES job ID of the specified address space.
- 2. Address space name (asname) and current stepname.
- 3. Address space dispatching priority.

4. Performance group and period.
5. Job message class and allocation and termination message levels.
6. Name of the program that was given control when the current step began execution and the programmer name from the job JCL statement.
7. Time of day the address space was initiated and the initiation job class.
8. Time of day the current step began execution, the current step number, and the total number of steps in the job.
9. Amount of CPU time, in seconds, used by the step in TCB mode, and the amount of CPU time, in seconds, used by the step in SRB mode.
10. Total amount of CPU time, in seconds, used by the current step, the amount of CPU time, in seconds, allotted to the current step, and the percentage of allocated CPU time which has been used.
11. Amount of virtual storage (in 1024-byte increments) requested by the current step and the amount above the 16MB boundary used by the current step.
12. Amount of virtual storage below the 16MB boundary line currently in use and the amount above the 16MB boundary line currently in use.
13. Highest amount of virtual storage below the 16MB boundary line used by the current step and the highest amount above the 16MB boundary line used by the current step.

REPLIES

The REPLIES (REP) service displays outstanding MVS replies with job number, reply number, and the first 56 characters of the message text. Use the REPLIES service to ensure that replies are not overlooked.

Syntax



where

system name Is the 1- to 8-character system name.

ALL Displays replies from all systems.

Note: If you type REPLIES without parameters, only messages from the current system are displayed.

Example

To display outstanding MVS replies from the current system, type:

| replies | | | |
|---------|---------|----------|--|
| AMTR16I | SYSNAME | JOB ID | MESSAGE TEXT |
| | ① | ② | ③ |
| AMTR12I | SYSB | STC03223 | *94 DSI802A CNM01 REPLY WITH VALID NCCF |
| AMTR17I | | | SYSTEM OPERATOR COMMAND |
| AMTR12I | SYSB | STC01830 | *87 (IMFSSK) DBC839I REPLY NULL FOR |
| AMTR17I | | | ATTENTION INTERRUPT |
| AMTR12I | SYSB | JOB01823 | *60 DFS996I *IMS READY* X15H |
| AMTR12I | SYSB | STC00234 | @03 ADM2000 I ADMOPUT(ADMPRINT). TO |
| AMTR17I | | | TERMINATE, REPLY 'STOP', 'STOPQ', OR 'STOPS' |

Legend:

- 1. Name or ID of the system where the replies were issued.
- 2. JES job ID, including the job number and type (JOB for batch job, STC for started task, and TSU for time-sharing user).
- 3. Reply number.
- 4. Reply text.

RESERVES

The RESERVES (RES) service

- Helps determine the cause of poor DASD performance or system lockouts
- Displays reserve activity for DASD devices
- Displays system contention caused by long-term reserves (a reserve issued by one processor for a single resource prevents all other processors from accessing the entire volume)

Syntax

►►——RESERVES——◄◄

Example

To display reserve activity on DASD devices, type:

```
reserves
  1      2      3      4
AMTQ1PI SYSTEM (LOCAL) Q=SYSZVVD S R=CATALOG. I CFMCAT. SYSC
AMTQ1QI SYSID JOBNAME ASID STAT TYP TIME 14: 12: 19
AMTQ1RI SYSB QA7A (0087) OWNS EXC
AMTQ1RI SYSA FLN1 (0096) WAIT EXC
AMTQ1RI SYSB QA7 (0352) WAIT EXC
AMTQ1LI
AMTQ1PI SYSTEM (LOCAL) Q=SYSI GGV2 R=ICFUCAT. VTSG304
AMTQ1QI SYSID JOBNAME ASID STAT TYP TIME 14: 12: 19
  5      6      7      8      9      10      11      12      13      14
AMTQ1RI SYSC MPP1 (0121) OWNS SHR RES=003 PEND 291 TSG304 NR
AMTQ1RI SYSC MPP1 (0121) OWNS SHR CVT
AMTQ1RI SYSB ARG1 (0162) WAIT EXC
```

Legend:

1. Scope of enqueue. The possible scopes are as follows:
 - SYSTEMS
 - SYSTEM
 - STEP
2. Whether the resource is global or local.
3. Major name (Q=).
4. Minor name (R=).
5. System ID for the system executing the task that is holding or waiting for the resource.
6. Jobname, TSO user ID, or started task ID for the address space containing the task that is holding or waiting for the resource. The jobname is not available in some situations.

RESERVES

7. ID for the address space holding or waiting for the resource.
8. Current status (OWNS or WAIT), indicating that the task holds (OWNS) the resource or is waiting (WAIT) for the resource.
9. Type of enqueue: **EXC** for exclusive, **SHR** for shared.
10. When **RES** is displayed: Indicates that a reserve is associated with the enqueue. The reserve count is also displayed unless it is zero, in which case the equal sign is also omitted.

When **CVT** is displayed: Indicates that reserve request has been converted to global enqueue. The remaining four fields may not appear.
11. If present, indicates that the reserve is pending, which means that the task is waiting to reserve the devices. Generally, the device is reserved by another system.
12. Device address in hexadecimal.
13. Volume serial number.
14. If present, indicates that the device is not ready.

RSM

The RSM service provides information on the allocation of real storage within the system. This service also determines the number of pageable and fixed real-storage frames allocated to system common storage areas (LPA, CSA), the system queue area (SQA), and private storage. You can also display the number of frames allocated to each address space.

You can use this information to observe:

- The effects of real-storage page fixing
- The usage of real-storage frames residing above the 16MB line
- The impact of specific workloads on the real-storage resource

Syntax



where

| | |
|-----------------|---|
| MAP | Provides a tabular display of the amount of real storage allocated to each address space. |
| ASI D | Sorts the output in ascending order by address space identifier. |
| NAME | Sorts the output in alphabetical order by address space name or system area. |
| FRAMES | Sorts the output in descending order by the total number of frames allocated to the address space or system area. Only the address spaces with the 10 highest numbers of allocated frames are displayed. |
| FI XED | Sorts the output in descending order by the total number of frames allocated to the address space or system area that are marked as fixed. Only the address spaces with the 10 highest numbers of allocated fixed frames are displayed. |
| <16MB | Sorts the output in descending order by the number of frames allocated to the address space or system area that is currently marked as fixed below the 16MB line. Only the address spaces with the 10 highest number of fixed frames below the 16MB line are displayed. |

| | |
|---------|--|
| LSQA | Sorts the output in descending order by the total number of frames allocated to the local system queue area for the listed address space. Only the address spaces with the 10 highest number of frames allocated to the local system queue area are displayed. |
| WSS | Sorts the output in descending order by the working set size of the address space at the time of the last swap-out. Only the address spaces with the 10 largest working set sizes are displayed. |
| PERCENT | Sorts the output in descending order by the percentage of online real storage frames allocated to the address space. Only the address spaces with the 10 highest percentages of online real storage frame allocations are displayed. |

Examples

To display real-storage allocation, type:

| rsm | | |
|-------------------------|-------------|-------------------|
| AMTRS0I | TOTAL | FIXED |
| | ① | ② |
| AMTRS1I PRIVATE FRAMES: | 13975 | 4589 |
| | ③ | ④ |
| AMTRS2I COMMON FRAMES : | 2010 | 289 |
| | ⑤ | ⑥ |
| AMTRS3I SQA FRAMES : | 1201 | 1201 |
| | ⑦ | ⑧ |
| AMTRS4I FREE FRAMES : | 495 | 0 |
| | ⑨ | ⑩ |
| AMTRS5I TOTAL ONLINE | 17681 | 6079 (>16MB 1175) |
| | ⑪ | ⑫ |
| AMTRS6I NUCLEUS : | 747 | 747 |
| | ⑬ | ⑭ |
| AMTRS7I HSA FRAMES : | 0 | 0 |
| | ⑮ | |
| AMTRS8I *UNKNOWN* : | 4 | |
| | ⑯ | ⑰ |
| AMTRS9I TOTAL : | 18432 (72M) | 6826 |

Legend:

1. Total frames-free-common allocated to private areas.
2. Fixed RCETOTFX-RCECOMFX-SQA frames allocated to private areas.
3. Total RCECOMAL-SQA frames allocated to common (LPA+CSA).
4. Fixed frames allocated to common (CSA+LPA).
5. Frames allocated to SQA (source: MVS RSM).
6. Always same as SQA total.
7. Total free frames (calculation: RCEAFC).
8. Always zero.

9. Number of frames currently online (calculation: RCEPOOL is equal to the total of the fields in the column).
10. Total fixed frames allocated in system (calculation: RCETOTFX is equal to the total of the fields in the column).
11. Frames allocated to system nucleus.
12. Same as nucleus total.
13. Frames allocated to hardware storage area (HSA).
14. Always zero.
15. Frames unaccounted for (bad, offline).
16. None.
17. Total storage on the machine.

To display the amount of real storage allocated to each address space, type:

| rsm map | | | | | | | | |
|---------|-----------------|------|-------------|-------|-------|------|------|---------|
| AMTRS0I | | | TOTAL | | FIXED | | | |
| AMTRS1I | PRIVATE FRAMES: | | 13975 | | 4589 | | | |
| AMTRS2I | COMMON FRAMES : | | 2010 | | 289 | | | |
| AMTRS3I | SQA FRAMES : | | 1201 | | 1201 | | | |
| AMTRS4I | FREE FRAMES : | | 495 | | 0 | | | |
| AMTRS5I | TOTAL ONLINE | | 17681 | | 6079 | | | |
| AMTRS6I | NUCLEUS : | | 747 | | 747 | | | |
| AMTRS7I | HSA FRAMES : | | 0 | | 0 | | | |
| AMTRS8I | *UNKNOWN* | | 4 | | | | | |
| AMTRS9I | TOTAL : | | 18432 (72M) | | 6826 | | | |
| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| AMTR25I | NAME | ASID | FRAMES | FIXED | <16MB | LSQA | WSS | PERCENT |
| AMTR26I | NPDA | 0009 | 113 | 27 | 14 | 24 | 108 | 1 |
| AMTR26I | TSOXA01 | 0013 | 60 | 14 | 14 | 13 | 59 | 1 |
| AMTR26I | IMSMG | 000E | 27 | 15 | 2 | 15 | 47 | -- |
| AMTR26I | IMCTL | 000D | 300 | 37 | 26 | 29 | 41 | 5 |
| AMTR26I | JOBXA01 | 001F | 57 | 13 | 3 | 13 | 37 | 1 |
| AMTR26I | VTAM | 000B | 333 | 24 | 8 | 23 | 28 | 5 |
| AMTR26I | DUMPSRV | 0005 | ---- | 14 | ---- | 14 | 25 | -- |
| AMTR26I | TCAS | 000A | ---- | 14 | ---- | 14 | 25 | -- |
| AMTR26I | JES3 | 0008 | 55 | 15 | 2 | 13 | 20 | -- |
| AMTR26I | ALLOCAS | 0007 | 45 | 11 | ---- | 11 | 12 | -- |
| AMTR26I | CONSOLE | 0006 | 28 | 12 | ---- | 12 | 12 | -- |
| AMTR26I | GRS | 0004 | 72 | 21 | ---- | 17 | 12 | 1 |
| AMTR26I | JES3AUX | 000C | 26 | 17 | 5 | 12 | 12 | -- |
| AMTR26I | PCAUTH | 0002 | 18 | 15 | ---- | 15 | 12 | -- |
| AMTR26I | TRACE | 0003 | 28 | 25 | ---- | 25 | 12 | -- |
| AMTR26I | * FREE * | **** | 1309 | ---- | ---- | ---- | ---- | 23 |
| AMTR26I | *MASTER* | 0001 | 71 | 44 | ---- | 38 | ---- | 1 |
| AMTR26I | CSA | **** | 633 | 120 | 178 | ---- | ---- | 11 |
| AMTR26I | LPA | **** | 643 | 58 | ---- | ---- | ---- | 11 |
| AMTR26I | NUCLEUS | **** | 374 | 374 | ---- | ---- | ---- | 6 |
| AMTR26I | SQA | **** | 359 | 359 | ---- | ---- | ---- | 6 |

Legend:

1. Name of the address space or system area whose frame counts are being provided. The first entry (flagged as *FREE*) contains a count of the number of unallocated frames in the system.

System queue area (SQA), link pack area (LPA), and common storage area (CSA) table entries follow the FREE entry. System area entries are followed by the entries for the system address spaces (*MASTER*, PCAUTH, and so on) that are established during system initialization.

Entries for each additional address space in the system are then listed (in ASID order). The last table entry describes the system nucleus.

2. Hexadecimal address space identifier. This field contains asterisks (****) for the free space and system table entries.
3. Total number of frames allocated to the address space or system area.
4. Total number of frames allocated to the address space or system area that is currently marked as fixed. This is a subset of the total frame count provided in the FRAMES field.
5. Total number of frames allocated to the address space or system area that is currently marked as fixed below the 16MB line. This is a subset of the total fixed-frame count provided in the FIXED field.
6. Total number of frames allocated to the local system queue area for the listed address space. This is a subset of the total fixed-frame count provided in the FIXED field.
7. Working set size of this address space at the time of the last swap-out. This field is valid only for swappable address spaces. The nonsystem address spaces, which start out as swappable but later change status to nonswappable, continue to display what appears to be a fixed working set size. In this case, the count actually shows the working set size at the time the address space became nonswappable.
8. Percentage of online real-storage frames allocated to this address space. This is calculated as total frames (pageable and fixed) allocated to the address space or system area divided by RCEPOOL times 100 percent. If the result of this calculation yields a result less than 1 percent, the field is replaced by dashes (--).

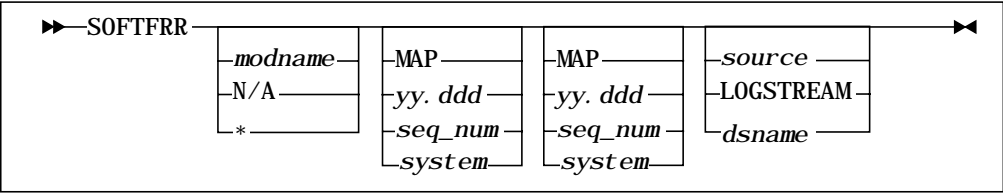
SOFTFRR

The SOFTFRR (SO) service

- Reads and summarizes software records from the logstream or a LOGREC data set
- Displays information about software errors
- Displays software records for a specific module name
- Can use previously allocated LOGREC data sets (other than SYS1.LOGREC)

The SOFTFRR service displays the newest records first and the oldest records last. Up to 256 records will be selected for display. When records are obtained from the logstream, records older than seven days will not be selected.

Syntax



where

| | |
|----------------|--|
| <i>modname</i> | When specified, only records containing the specified modname in the recording parameters are selected. |
| N/A | When specified, indicates that only records with a blank module name in the recording parameters are selected. |
| * | When specified, indicates that all records are selected. When specified without MAP, abstract data is displayed for each record, rather than a summary report. |
| MAP | Indicates that all data in the selected software logrec records is displayed. This includes an English translation of all flags and the data in the Variable Recording Area, if any. |
| <i>seq_num</i> | When specified, only records containing the specified sequence number (error identification number) are selected. |
| <i>yy. ddd</i> | Is the Julian date. When specified, only records created on or after the specified Julian date are selected. |
| LOGSTREAM | When specified as the fourth parameter, indicates that records are obtained from the logstream, even if records are not currently being recorded in the logstream. To display records from the current recording media, omit the fourth parameter. |

dsname When a value other than LOGSTREAM is specified as the fourth parameter, it is assumed to be a LOGREC data set. The records are obtained from this data set even if it is not currently being used for recording errors. To display records from the current recording media, omit the fourth parameter.

Note: If you type SOFTFRR without operands, the service summarizes all software records in the LOGREC data set.

Examples

To summarize all software records, type:

SOFT
AMTL3NI Processing logstream SYSPLEX. LOGREC. ALLRECS
AMTL31I 67 Records read; 17 Records accepted
AMTL39I N/A 00003 IXGINLPA 00003 IGC0013I 00001
AMTL39I IKJEFLC 00003 ISLOAD 00001 NUCLEUS 00001
AMTL39I BBM33 00001 XDCCALL 00001 IMF 00001
AMTL39I BBI 00002
1 2

Legend:

- 1. Lists all modnames for which there is data. N/A (not available) means that the module identifier consists of binary zeros.
- 2. Shows the number of records for each modname.

To display all of the data for records containing the modname BBM33, type:

```

SOFT, BBM33, MAP
AMTL3NI Processing logstream SYSPLEX.LOGREC.ALLRECS
AMTL3QI Record from system SYSC ❶
AMTL32I ErrorID: CUID: 0000; SeqNo: 296; Time: 17.15.57.8; ASID: 0028
AMTL33I Abend U1900 on 04/16/97 at 17.15.58.09 -- BBM33
. BBMSF20. BBMOZE20

AMTL34I Err-PSW: 070C1000 FF6E4020; ILC 2; INTC 000D; Trans: 00000000 ❷
AMTL3HI Data at PSW-6 47F0, 9E16, 0A0D, 0003, 0001, 0000
AMTL35I EFLGS: Task issued SVC 13 | Enabled RB in control
AMTL35I : Service information available | Abnd due to ancestor task error
AMTL35I : ErrorID information available |
AMTL36I Err-Regs 0-3 00000001 8400076C FF6E32C8 11BB1880
AMTL36I Err-Regs 4-7 7F6E4784 11BAD7BC 00000008 11BAD91C
AMTL36I Err-Regs 8-11 91BB1956 7F6E3208 7F6DB8D0 007C8C78
AMTL36I Err-Regs 12-15 7F6DF520 7F6DB720 FF6E32C8 00030001
AMTL37I RB-PSW: 070C0000 91BB1CAC; ILC 2; INTC 000D ❸
AMTL38I RB-Regs 0-3 00000001 7F4BA8D0 00000040 7F4BA8D0
AMTL38I RB-Regs 4-7 11BAD1D8 11BAD7BC 00000008 11BAD91C
AMTL38I RB-Regs 8-11 91BB1956 91BB1880 7F6DB8D0 007C8C78
AMTL38I RB-Regs 12-15 7F6DF520 7F6DB720 91BB1CAC 7F6E3208
AMTL3EI Recovery routine percolated error with 'No ESTAI/STAI' Option ❹
AMTL3GI RFLGS: LOGREC recording requested

AMTL3AI Variable Recording Area (VRA) Data ❺

AMTL3II VRAPID Product ID: BBM#ZZ
AMTL3II VRAHID Header ID: SEQN
AMTL3II VRAEHX Error information in hex: 00000001
AMTL3II VRAHID Header ID: NRRC
AMTL3II VRAEHX Error information in hex: 01
AMTL3II VRAHID Header ID: FLGS
AMTL3II VRAHEX Information in hex: 7014044010000000
AMTL3II VRAPA Execution path trace data: BBMSF20

```

Note: The above record was obtained from the logstream.

Legend:

1. Displays the name of the system where data has been obtained.
2. Displays the error level PSWs and registers. The 6 bytes of data preceding and following the PSW address at the time of theabend are also shown.
3. Displays the RB level PSW and registers.
4. Translates the status flags.
5. Displays variable recording area (VRA) data, if any.

To display the modname and map for the records that have data coming from the LOGREC, type:

```

SOFT, IKJEFT01, MAP
AMTL30I Software Logrec Report (Vol=ES430M; Dsn=SYS1.LOGREC)

AMTL32I ErrorID: CPUID: 0000; SeqNo: 937; Time: 14.26.53.3; ASID: 008A
AMTL33I Abnd S13E on 04/23/97 at 14.26.53.68 -- IKJEFT01.IKJEFTSC.IKJEFT05

AMTL34I Err-PSW: 078C0000 80077A30; ILC 2; INTC 0001; Trans: 00000000 ❶
AMTL3HI Data at PSW-6 4100,0001,0A01,D503,401C,C4E8
AMTL35I EFLGS: System issued SVC 13 |Enabled RB in control
AMTL35I :Cleanup only - Retry not allowed|Abnd due to ancestor task error
AMTL35I :ErrorID information available |
AMTL36I Err-Regs 0-3 00000001 11A07F98 00000000 00050A38
AMTL36I Err-Regs 4-7 11A07F7C 11A323E8 00000000 000C86E0
AMTL36I Err-Regs 8-11 00050A38 0010F768 00077B84 0010EF28
AMTL36I Err-Regs 12-15 80077740 000C8330 00077B7C 807B8658
AMTL37I RB-PSW: 071C1000 810FF542; ILC 2; INTC 000D ❷
AMTL38I RB-Regs 0-3 00000001 FF84C804 83F75728 03F76727
AMTL38I RB-Regs 4-7 007B7418 00000000 007B3E20 007FE030
AMTL38I RB-Regs 8-11 00000000 807B3D48 007B49B8 03F77726
AMTL38I RB-Regs 12-15 007B32F0 007B32F0 007B3D48 807B76C8
AMTL3DI Recovery routine percolated error ❸
AMTL3GI RFLGS: LOGREC recording requested

AMTL3AI Variable Recording Area (VRA) Data ❹

AMTL3II VRACBM Control block macro name: TMPWRKA2
AMTL3II VRADAE DAE indicator:
AMTL3II VRACBA Control block address: 00005000F2F8

AMTL31I 839 Records read; 1 Records accepted

```

Note: The above record was obtained from SYS1.LOGREC.

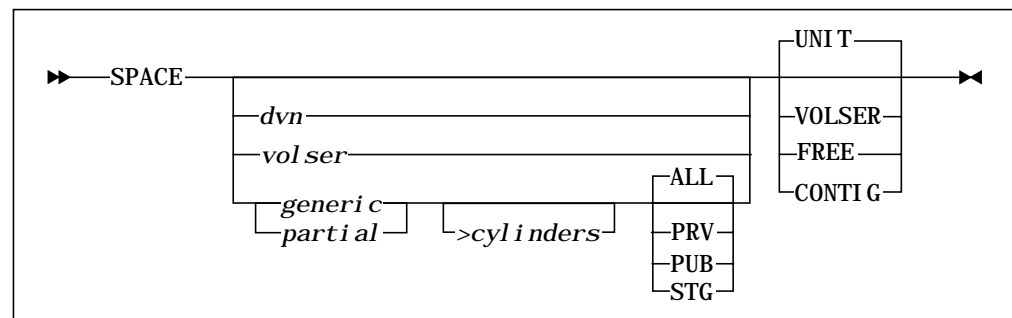
Legend:

1. Displays the error level PSWs and registers. The 6 bytes of data preceding and following the PSW address at the time of the abend are also shown.
2. Displays the RB level PSW and registers.
3. Translates the status flags.
4. Displays variable recording area (VRA) data, if any.

SPACE

The SPACE (SPA) service determines the amount of space available on a set of specified devices and displays the amount by device number. Use this service to find volumes that contain a specified minimum amount of available contiguous space, in cylinders.

Syntax



where

| | |
|----------------------|---|
| <i>dvn</i> | Is a device number. |
| <i>vol ser</i> | Is a complete six-character volume serial number. |
| <i>generic</i> | Is a generic or esoteric device name. |
| <i>partial</i> | Is the first 1 to 5 characters of a volume serial number. |
| <i>>cylinders</i> | Specifies a minimum amount of available contiguous space, in cylinders. When this parameter is specified, the output is sorted in descending order by the CONTIG field, unless specified otherwise. When this parameter is omitted, the output is sorted in descending order by the FREE field, unless specified otherwise. |
| ALL | Displays both online and offline devices. |
| PRV | Specifies that only devices with a mount attribute of PRV (Private) be displayed. |
| PUB | Specifies that only devices with a mount attribute of PUB (Public) be displayed. |
| STG | Specifies that only devices with a mount attribute of STG (Storage) be displayed. |
| UNIT | Specifies that the output be sorted in ascending order by unit address; the default. |
| VOLSER | Specifies that the output be sorted in ascending order by volser. |
| FREE | Specifies that the output be sorted in descending order by the amount of free space. Only the 10 devices or volsers with the highest amount of free space are displayed. |

CONTIG Specifies that the output be sorted in descending order by the amount of contiguous free space. Only the 10 devices or volsers with the highest amount of contiguous free space are displayed.

Examples

To display disk space for the SYSALLDA esoteric unit name, type:

```
space sysallda free
  1      2      3
AMTS10I ESOTERIC UNITNAME SYSALLDA DEFINES 3 DEVICES
  4      5      6      7      8
AMTS11I UNIT B13 SYSP3B PUB FREE= 130 CYL/ 21 TRK; CONTIG= 100 CYL/ 11 TRK
AMTS11I UNIT 500 SYSR1A STR FREE= 124 CYL/ 71 TRK; CONTIG= 13 CYL/ 0 TRK
AMTS11I UNIT 240 SYSP2B PRV FREE= 20 CYL/ 21 TRK; CONTIG= 10 CYL/ 11 TRK
```

Legend:

- 1. GENERIC or ESOTERIC.
- 2. Requested generic or esoteric unitname.
- 3. Number of devices described by the generic or esoteric unitname.
- 4. Unit address.
- 5. Volume name.
- 6. Device type:
 - PRV is PRIVATE
 - PUB is PUBLIC
 - STR is STORAGE
- 7. Number of free cylinders and tracks.
- 8. Largest number of contiguous cylinders and tracks.

To display disk space for devices that start with a partial volume serial number of TNT and have more than 20 cylinders of contiguous free space, type:

```
space tnt >20
AMTS11I UNIT B13 TNT001 PRV FREE= 16 CYL/ 260 TRK; CONTIG= 12 CYL/ 10 TRK
AMTS11I UNIT B13 TNT002 PRV FREE= 40 CYL/ 260 TRK; CONTIG= 23 CYL/ 1 TRK
AMTS11I UNIT B13 TNT003 PUB FREE= 83 CYL/ 260 TRK; CONTIG= 44 CYL/ 9 TRK
AMTS11I UNIT B13 TNT004 STR FREE= 109 CYL/ 260 TRK; CONTIG= 100 CYL/ 3 TRK
```

SRM

The SRM service displays system resources manager values and data elements used for job and system management. The addresses of SRM control blocks are also provided so you can modify control fields by using the ZAP service. This service also determines the current status of key SRM control values.

Syntax



where

| | |
|-------------------|--|
| <i>asname</i> | Is the name of the address space about which you want information. |
| (<i>asi d</i>) | Is the address space identifier in decimal format. |
| (<i>Xasi d</i>) | Is the address space identifier in hexadecimal format. |
| * | Specifies the last address space entered. |
| @ | Specifies your own address space. |
| MAP | Displays the addresses of SRM control blocks. |

Examples

To display system resource information, type:

```

srm
AMTS30I PARMLIB MEMBERS: IPS=01      OPT=00      ICS=00
AMTS31I ADDRESS SPACES : IN= 45      O/RDY= 0      O/NRDY= 62  LOGWT=nn
AMTS32I RESOURCE STATUS: CPU= 57%     LTCPU= 66%    HIGH UIC= 11
AMTS36I PAGING RATE/SEC: DEMAND= 23   TOTAL= 29     DELAY TIME= 40
AMTS39I THINK TIME(SEC): CURR= 10.0   MIN= 9.0     MAX= 60.0
  
```

To display the addresses of SRM control blocks as well, type:

```

srm map
AMTS30I  PARMLIB MEMBERS:  IPS=01      OPT=00      ICS=00
                        ①
AMTS31I  ADDRESS SPACES :  IN=  45      ②      ③      ④      ⑤      ⑥      ⑦      LOGWT=nn
                        ⑤      ⑥      ⑦
AMTS32I  RESOURCE STATUS:  CPU=  57%      LTCPU= 66%      HIGH UIC= 11
AMTS36I  PAGING RATE/SEC:  DEMAND=  23      TOTAL=  29      DELAY TIME=  40
AMTS39I  THINK TIME(SEC):  CURR=  10.0      MIN=   9.0      MAX=  60.0

RMCT 0111B2A0  RMCA 0111B908  RMPT 0111B898  CCT 0111B4C8
ICT  0111B5C8  MCT  0111B630  LSCT 0111BA68  DMDT 01977D90
CMCT 0111BAA8  CPMT 0196EE20  CMB  01EFE000  CPWK 0196EE00

```

Legend:

1. Name of the installation performance specification member, currently in effect, in the SYS1.PARMLIB library.
2. Number of address spaces currently swapped in memory.
3. Number of address spaces swapped out of memory but ready.
4. Number of address spaces out of memory and not ready.
5. Current SRM-weighted percentage of CPU busy.
6. Long-term SRM-weighted percentage of CPU busy.
7. Highest unreferenced interval count.

To display system resource information for address space INVENTORY, type:

```

srm inventory
AMTS71I  JOB 283 INVENTORY STEP1 PRTY 6(111) PGP 2/1
                        ①      ②      ③
AMTS72I  TRANSACTION DATA: INTERVAL 2: 26: 14  DOMAIN  3
                        ④
AMTS73I  LAST SWAP      : INTERVAL 0: 00: 16  REASON IN MEMRY COUNT 254
                        ⑤      ⑥
AMTS74I  SWAPPING PROFILE: COUNT  1  PGS-OUT N  WRK-SET 91
                        ⑦
AMTS75I  SERVICE DATA  : CPU 29205  I/O 6450  MSO 4100  TOTAL 39755
                        ⑧

```

Legend:

1. Job ID, jobname, and stepname for the specified job.
2. Priority and internal dispatching priority.
3. Performance group and period.
4. Duration of this particular transaction. The DOMAIN value is the IPS domain in which this job resides.

5. The LAST SWAP INTERVAL is the time since the last swap action. If the job is in memory, this is the time it has been in; if it is out of memory, it is the time it has been swapped out.

The REASON code shows the cause of the current swap status. Allowable codes are as follows:

| Code | Description |
|----------|---|
| ASM LOW | Swapped out due to auxiliary storage shortage |
| ENQ EX | Swapped out due to enqueue exchange |
| IN MEMRY | Swapped in |
| LONG WT | Swapped out due to long wait |
| MSO WAIT | Swapped out due to MSO-detected long wait |
| REC EX | Swapped out due to recommendation values |
| REQUEST | Swapped out due to a request swap |
| RSM LOW | Swapped out due to a real-storage shortage |
| TERM IN | Swapped out due to terminal input wait |
| TERM OUT | Swapped out due to terminal output wait |
| UNI LTRL | Swapped out due to unilateral swap-out |

6. Number of swaps during the life of the current transaction.
7. Pages swapped at last swap-out and the working-set size at swap-in.
8. Service units for this transaction. Values are as follows:

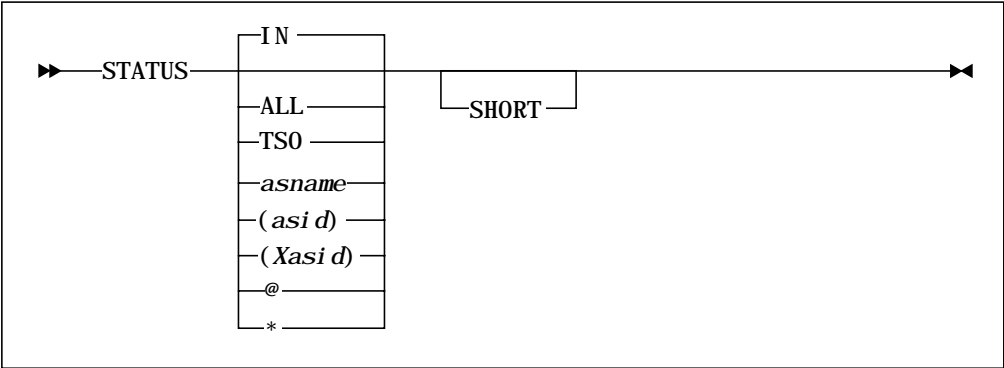
| Name | Description |
|-------|---|
| CPU | CPU service units |
| I /O | I/O service units |
| MSO | Main storage occupancy service units |
| TOTAL | Total service units for this transaction. |

Note: The appearance of *** means that these values are temporarily invalid because they are being updated by SRM. Invoke the SRM service again to display updated values.

STATUS

The STATUS (STA) service monitors and displays the current status of active address spaces in the system.

Syntax



where

| | |
|-------------------|---|
| IN | Displays the status of all address spaces swapped in memory; the default. |
| ALL | Displays the status of all address spaces. |
| TSO | Displays the status of all TSO users. |
| <i>asname</i> | Displays the status of a specific address space name. |
| (<i>asi d</i>) | Is the address space identifier in decimal format. |
| (<i>Xasi d</i>) | Is the address space identifier in hexadecimal format. |
| @ | Displays the status of your own address space. |
| * | Displays the status of the last address space entered. |
| SHORT | Shortens the display to accommodate console screen width. |

Examples

To display the status of all active address spaces swapped in memory, type:

| status | | | | | | | | | | | | |
|---------------|-----------|-------|-----|----|---------|---------|-----|----------|-------|-----|-------|--|
| | ① | ② | ③ | ④ | ⑤ | | | | | | | |
| AMTS21I | INVENTORY | (6) | IN | CP | FM(35) | WS(16) | CPU | 1234. 56 | Q(09) | PGP | 10/1 | |
| AMTS21I | SMIGO | (47) | NSW | LW | FM(215) | WS(***) | CPU | 168. 12 | Q(01) | PGP | 9/3 | |
| AMTS21I | *MASTER* | (1) | NSW | | FM(97) | WS(***) | CPU | 21. 59 | TRQ | PGP | 0/XX | |
| AMTS21I | PCAUTH | (2) | NSW | | FM(35) | WS(***) | CPU | 0. 03 | TRQ | PGP | 1/ 1 | |
| AMTS21I | RASP | (3) | NSW | | FM(76) | WS(***) | CPU | 0. 09 | TRQ | PGP | 1/ 1 | |
| AMTS21I | TRACE | (4) | NSW | | FM(98) | WS(***) | CPU | 0. 01 | TRQ | PGP | 1/ 1 | |
| AMTS21I | XCFAS | (5) | NSW | | FM(174) | WS(***) | CPU | 0. 34 | TRQ | PGP | 1/ 1 | |
| AMTS21I | GRS | (6) | NSW | | FM(151) | WS(***) | CPU | 0. 06 | TRQ | PGP | 1/ 1 | |
| AMTS21I | SMXC | (7) | NSW | | FM(16) | WS(***) | CPU | 0. 00 | TRQ | PGP | 10/ 1 | |
| AMTS21I | SYSBMAS | (8) | NSW | | FM(22) | WS(***) | CPU | 0. 00 | TRQ | PGP | 1/ 1 | |
| AMTS21I | DUMPSRV | (9) | NSW | | FM(29) | WS(***) | CPU | 1. 05 | TRQ | PGP | 5/ 1 | |
| AMTS21I | CONSOLE | (10) | NSW | | FM(155) | WS(***) | CPU | 22. 46 | TRQ | PGP | 1/ 1 | |

Legend:

1. Address space name.
2. Address space ID (ASID).
3. Status indicator #1. Possible values are as follows:

| Value | Description |
|-------|-----------------------|
| NSW | Nonswappable |
| LS | Logically swapped |
| PVL | Privileged |
| OUT | Swapped out of memory |
| GOI | Going in |
| GOB | Going between states |
| ENQ | Enqueue privileged |
| IN | In memory |
| GOO | Going out of memory |

4. Status indicator #2. Possible values are as follows:

| Value | Description |
|-------|---|
| LS | Address space is logically swapped-out |
| MS | Main storage optimized detected long wait |
| LW | Long wait (explicit) |
| CP | Significant CPU user |

5. Real frames currently in use by this address space.
6. Current working set in pages. If a job is nonswappable, the working set is displayed as ***. The current working set is the number of page frames swapped at the last swap action. This is also the number of page frames necessary to swap-in an address space.

STATUS

7. CPU time used by the current step in this address space, in seconds and hundredths.
8. TRQ indicates that the address space is on the truly ready queue; NTRQ indicates that the address space is not on the truly ready queue.
9. Performance group and period for this address space. An asterisk (*) indicates the value is temporarily invalid.

SYSDUMP

The SYSDUMP (SYS) service displays the title of the dump, as well as the date and time the dump was taken for each active dump data set. This service also determines if SVC dumps should be retained or deleted, which helps prevent the loss of important dumps due to all dump data sets being full.

Syntax

►—SYSDUMP —◄

Example

To display information about each active dump data set, type:

```
sysdump  
AMTDU0I  SYS1. DUMP01  WAS FILLED AT 10:21 ON MAR 14, 1996  
AMTDU1I  SOURCE=SVCDUMP  
AMTDU2I  TITLE=ERROR IN TSO
```

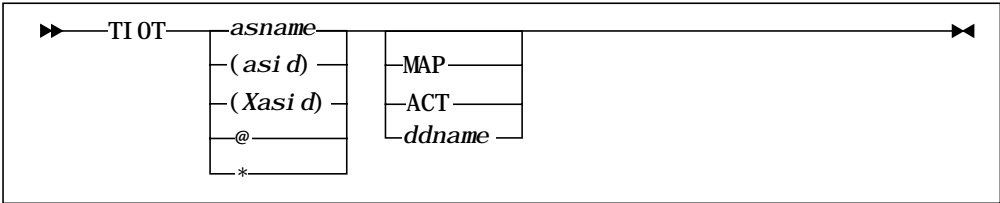
Legend:

1. A full-dump data set.
2. Time and date of dump.
3. System component that took the dump.
4. Message text describing the dump.

TIOT

The TIOT (TIO) service displays all allocated devices for a specified address space and monitors the usage of data sets by address space.

Syntax



where

- asname* Is an address space name.
- (asid)* Is an address space identifier in decimal format.
- (Xasid)* Is an address space identifier in hexadecimal format.
- @ Specifies your own address space.
- * Specifies the last address space entered.
- MAP Displays the data set name(s) associated with each TIOT entry.
- ACT Displays the active TIOT entries that contain data sets with nonzero EXCP counts. The data set names are listed, as is the case with MAP.
- ddname* Is the name of a DD statement. Specifying this parameter displays the data set names associated with the specified DD name.

Note: If, within a concatenation, more than one of the data sets are allocated to a common volume, TIOT attributes all the EXCPs for the data sets sharing that volume to the first data set within the concatenation that is on the current volume.

For data sets sharing a common volume within a concatenation, IBM updates the TCT I/O table only for the first data set in the concatenation that resides on that volume.

Examples

To display all allocated devices for address space INVENTORY and display the data set name associated with each TIOT entry, type:

| tiot inventory map | | | | | | | | | |
|--------------------|-------------------------|------------------|------------------------|-----------------------|-----------------------|-------------------|--------------------|-------------------|--|
| AMTE11I | ¹ JOB | ² 332 | ³ INVENTORY | ⁴ UPDATE1 | ⁵ PRTY 279 | ⁶ PAGE | ⁷ I/O'S | ⁸ 1044 | |
| AMTE12I | ⁹ DD STEPLIB | | ¹⁰ UNIT 151 | VOLUME | SYS001 | EXCP | 604 | | |
| AMTE13I | | | DSN | SYS3. RESOLVE. LOAD | | | | | |
| AMTE12I | | | UNIT 250 | VOLUME | PERF01 | | | | |
| AMTE13I | | | DSN | BB. CMC. CMC310. LOAD | | | | | |
| AMTE12I | | | UNIT 250 | VOLUME | PERF21 | EXCP | 129 | | |
| AMTE13I | | | DSN | BB. CMC. CMC310. LINK | | | | | |
| AMTE12I | DD SYS00002 | | UNIT 254 | VOLUME | PUB001 | | | | |
| AMTE13I | | | DSN | SYSCTLG. PUB001 | | | | | |
| AMTE12I | DD SYS00003 | | UNIT 254 | VOLUME | PUB002 | EXCP | 15 | | |
| AMTE13I | | | DSN | SYSCTLG. PUB002 | | | | | |

Legend:

1. JES job ID.
2. Name of the specified address space.
3. Current stepname for the specified address space.
4. Internal dispatching priority for address space.
5. Total page faults requiring a page I/O operation for this address space.
6. DD name.
7. Device number.
8. Serial number of volume mounted on device.
9. EXCP count for each data set within each DD name.
10. Data set name associated with TIOT entry; issued only if you specify MAP, ACT, or *ddname*.

To limit output to TIOT entries that have data sets with nonzero EXCP counts, type:

| tiot inventory act | | | | | | | | | |
|--------------------|-------------|-----|-----------|-----------------------|----------|------|-------|------|--|
| AMTE11I | JOB | 332 | INVENTORY | UPDATE1 | PRTY 279 | PAGE | I/O'S | 1044 | |
| AMTE12I | DD STEPLIB | | UNIT 151 | VOLUME | SYS001 | EXCP | 604 | | |
| AMTE13I | | | DSN | SYS3. RESOLVE. LOAD | | | | | |
| AMTE12I | | | UNIT 250 | VOLUME | PERF21 | EXCP | 129 | | |
| AMTE13I | | | DSN | BB. CMC. CMC310. LINK | | | | | |
| AMTE12I | DD SYS00003 | | UNIT 254 | VOLUME | PUB002 | EXCP | 15 | | |
| AMTE13I | | | DSN | SYSCTLG. PUB002 | | | | | |

To limit output to the data set names associated with the DD name STEPLIB, type:

```

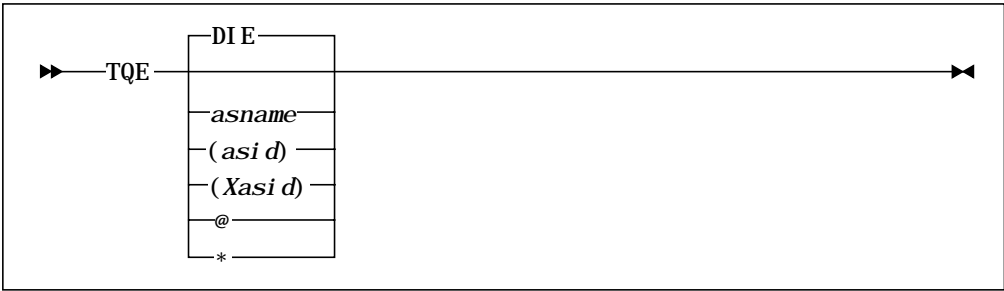
tiot inventory,steplib
AMTE11I JOB 332 INVENTORY UPDATE1 PRTY 279 PAGE 1/0'S 1044
AMTE12I DD STEPLIB UNIT 151 VOLUME SYS001 EXCP 604
AMTE13I DSN SYS3.RESOLVE.LOAD
AMTE12I UNIT 250 VOLUME PERF01
AMTE13I DSN BB.CMC.CMC310.LOAD
AMTE12I UNIT 250 VOLUME PERF21 EXCP 129
AMTE13I DSN BB.CMC.CMC310.LINK

```


TQE

The TQE service displays information about DIE routines scheduled for execution and pending timer interrupts for an address space.

Syntax



where

| | |
|----------|---|
| DIE | Indicates Disabled Interrupt Exit. This operand displays the TQE chain for all DIEs; the default. Note: A DIE executes as an extension to the first level interrupt handler. Therefore, a DIE routine interrupts and executes under any dispatchable unit of work (TCB or SRB) for any address space. |
| asname | Is an address space name. |
| (asi d) | Is an address space identifier in decimal format. |
| (Xasi d) | Is an address space identifier in hexadecimal format. |
| @ | Specifies your own address space. |
| * | Specifies the last address space entered. |

Examples

To display the TQE chain for all DIEs, type:

| | | | | | | |
|------------|---|----------|---------|------|-------|---------|
| tqe | | | | | | |
| AMTQE1I | TIMER QUEUE ELEMENTS, ACTIVE AT 11:16:45.59 | | | | | |
| AMTQE2I | TCB | | | | | |
| AMTQE3I | TIME | JOBNAME | ADDRESS | TYPE | FLAGS | CREATOR |
| | ① | ② | ③ | ④ | ⑤ | ⑥ |
| AMTQE4I | 11:16:45.60 | ----- | ----- | REAL | SRM | |
| AMTQE4I | 11:16:45.76 | DCSPAS | ----- | REAL | USER | SETDIE |
| AMTQE4I | 11:16:45.77 | DCSRES | ----- | REAL | USER | SETDIE |
| AMTQE4I | 11:16:45.82 | *MASTER* | ----- | REAL | USER | SETDIE |
| AMTQE4I | 11:16:45.91 | DCSPAS | ----- | REAL | USER | SETDIE |
| AMTQE4I | 11:16:45.94 | XCFAS | ----- | REAL | USER | SETDIE |
| AMTQE4I | 11:16:48.46 | LRLMPROC | ----- | REAL | USER | SETDIE |
| AMTQE4I | 11:17:29.33 | JES2 | ----- | REAL | USER | SETDIE |
| AMTQE4I | 11:17:44.09 | ----- | ----- | REAL | TLIM | |
| AMTQE4I | 11:17:47.36 | ----- | ----- | REAL | USER | SETDIE |
| AMTQE4I | 00:00:00.00 | ----- | ----- | REAL | MIDN | |

Legend:

1. Expiration time for the TQE.
2. Jobname for the TQE.
3. TCB address for the TQE; a value is displayed only if the TYPE field contains TASK or WAIT.
4. Type of TQE; can be REAL, TASK, WAIT, or UNKN.
5. Flags for the TQE; can be one of the following:

| | |
|------|--------------------------------|
| REAL | Real TQE being timed |
| USER | Non-system TQE |
| DUMY | Dummy system TQE |
| TLIM | Time limit checking system TQE |
| SRM | System Resources Manager TQE |
| RMF | RMF system TQE |
| MIDN | Midnight system TQE |
| UNKN | Unknown TQE |
6. Macro that created the TQE; can be SETDIE, STIMER, STIMERM, or blank.

To display TQEs for address space JES2, type:

```

tqe jes2
AMTQE1I  TIMER QUEUE ELEMENTS, ACTIVE AT 11:19:18.10
AMTQE2I  EXPIRE                                TCB
AMTQE3I  TIME          JOBNAME      ADDRESS    TYPE      FLAGS    CREATOR
AMTQE4I  11:19:18.13 JES2          007F0648  WAIT      USER     STIMER
AMTQE4I  11:19:18.13 JES2          -----  REAL      USER     SETDIE
AMTQE4I  11:19:22.45 JES2          007F03B8  WAIT      USER     STIMER
AMTQE4I  11:19:29.33 JES2          -----  REAL      USER     SETDIE

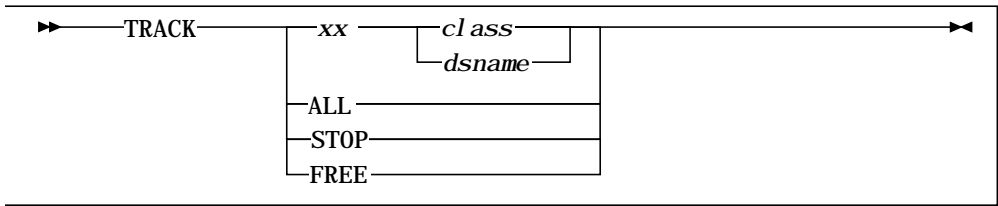
```

TRACK

The TRACK (TRA) service:

- Provides a record of every service you invoke during an MAINVIEW for OS/390 session
- Invokes and controls the MAINVIEW for OS/390 tracking system
- Tracks all services to SYSOUT or to a data set

Syntax



where:

- xx* Is a user-specified suffix. You can track up to 16 services by placing the service names in a member of the BBPARM library data set. The member is named \$\$INTK*xx*, where *xx* is the user-specified suffix.
- MAINVIEW for OS/390 automatically starts tracking at initialization time if member \$\$INTK00 is in the BBPARM library data set.
- class* Specifies a SYSOUT CLASS to which tracking output is routed.
- Note:** This specification is effective only if a tracking data set //TRACK is not allocated to MAINVIEW for OS/390.
- dsname* Allows specification of a data set name to which tracking output is routed.
- Note:** This specification is effective only if a tracking data set //TRACK is not allocated to MAINVIEW for OS/390.
- ALL Specifies tracking for every user-invoked service.
- STOP Terminates tracking.
- FREE Dynamically deallocates tracking output. If routed to SYSOUT, tracking output is passed to JES for immediate printing. The TRACK service must be inactive for this parameter to perform correctly. To deactivate the TRACK service, enter TRACK STOP and then TRACK FREE.

Examples

To initiate tracking of services specified in BBPARM library member \$\$INTK24, enter:

```
track 24  
AMIT48I TRACKING ACTIVE FOR LIST 24
```

To change from tracking member \$\$INTK24 to tracking member \$\$INTKAA, enter:

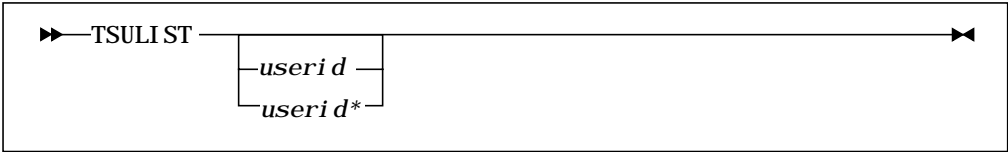
```
track aa  
AMIT44A ENTER Y TO TERMINATE TRACKING LIST 24 y  
AMIT48I TRACKING ACTIVE FOR LIST AA
```

TSULIST

The TSULIST service displays TSO session information. For active TSO users, the TSULIST service displays the following:

- User ID
- Address space ID
- Line number
- Type of system used
- Terminal name

Syntax



where

- userid* Is a TSO user ID.
- userid** Is a partial TSO user ID.

Examples

To display information about all TSO users currently logged onto the system, type:

| tsulist | | | | | |
|---------|-----------------------|------|------|------|---------|
| | ① | ② | ③ | ④ | ⑤ |
| | USERID | ASID | LINE | SYS | NODE |
| AMTTS1I | PPG14 | 9 | 000 | VTAM | RS3813 |
| AMTTS2I | VMON1 | 11 | 000 | VTAM | VAM/SPF |
| AMTTS2I | TS01 | 17 | 000 | VTAM | LSNAB05 |
| AMTTS2I | CSG1 | 20 | 000 | VTAM | L068 |
| AMTTS2I | PPG10 | 48 | 000 | VTAM | RS3814 |
| AMTTS2I | TS02 | 49 | 000 | VTAM | LSNAC28 |
| AMTTS2I | BTRAVIN | 50 | 03D | TCAM | TK501 |
| AMTTS2I | CPS21 | 54 | 000 | VTAM | L074 |
| AMTTS3I | 8 USERS ARE LOGGED ON | | | | |

Legend:

1. TSO user ID.
2. ASID (in decimal).
3. Line number for TCAM; for VTAM, zeros are displayed.

4. TCAM or VTAM.

5. Terminal name.

To display information about TSO user TSO1, type:

```
tsulist tso1  
AMTTS1I  USERID  ASID      LINE  SYS  NODE  
AMTTS2I  TS01      17      000   VTAM LSNAB05  
AMTTS3I  8 USERS ARE LOGGED ON
```

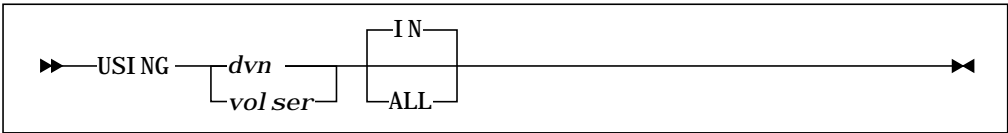
To display information about TSO users whose user IDs begin with the letters TSO, type:

```
tsulist tso*  
AMTTS1I  USERID  ASID      LINE  SYS  NODE  
AMTTS2I  TS01      17      000   VTAM LSNAB05  
AMTTS2I  TS02      49      000   VTAM LSNAC28  
AMTTS3I  8 USERS ARE LOGGED ON
```

USING

The USING (USI) service displays the active address spaces that are using a specified device. For example, if a tape drive appears inactive, you can determine which address space has allocated the device.

Syntax



where

- dvn* Is the hexadecimal device number.
- vol ser* Is a complete 6-character volume serial number.
- IN Displays only the swapped-in address spaces using the device; the default.
- ALL Displays all the active address spaces using the device.

Example

To display the active address spaces using device 234, type:

```

using BAB329
13: 01: 47 CMD=USING BAB329

      ①      ②      ③
AMTD29I Unit Job Name DDNAME Data Set Name
AMTD27I D3F MQMPASRK STEPLIB MQS12. BASE. LINKLIB
AMTD27I D3F MQMPASRK BBILoad MQS12. BASE. LINKLIB
AMTD27I D3F MQMPASRK ISPPROF BITRKK. XDC2. ISPPROF
AMTD27I D3F DDH1X BBI PROF DDH1. BBPROF
AMTD27I D3F DDH1X IPCSDDIR IPCS. DDH1ESA. IPCSDDIR
AMTD27I D3F X18HGBG DFSOLP03 IMS. V5100. OLP03
AMTD27I D3F X18HGBG MATRI XB IMS. V5100. MATRI XB
AMTD27I D3F MMQJB120 STEPLIB MQS12. BASE. LINKLIB
AMTD27I D3F MMQJB120 BBILoad MQS12. BASE. LINKLIB
AMTD27I D3F MMQJB120 DBGLIB BBM33. ENG. DBGLIB
AMTD27I D3F BMVSLK2 BBCLIB BB. XTSTH. BBCLIB
AMTD27I D3F BMVSLK2 BBI PROF BMVSLK. BMVSLK2. BBPROF
AMTD27I D3F AAOSSDHC BBI PARM DDH1. DH31. TRAVEL
AMTD27I D3F BOLGBG3 STEPLIB IPX11. BOLGBG. LOAD

```

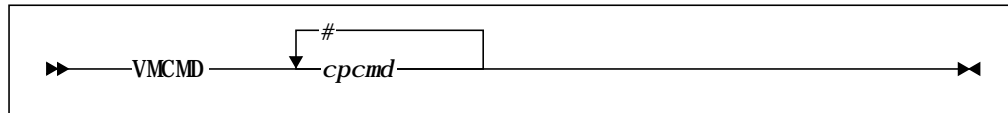

Legend:

1. Job name.
2. DD name of the DD statement for the data set allocated to this device.
3. Data set name.

VMCMD

The VMCMD (VM) service lets an MVS user running as a VM guest issue VM CP commands through the virtual console interface.

Syntax



where

cpcmd Is any valid CP command. A pound sign (#) delimits multiple CP commands.

Example

To enter the CP command Q NAMES, type:

```
vmcmd q names
```

Part 3. Using the MAINVIEW AutoOPERATOR for IMS Option

This part contains chapters that describe the applications available with the MAINVIEW AutoOPERATOR for IMS option (also referred to simply as AutoOPERATOR for IMS).

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Chapter 13. Introduction to MAINVIEW AutoOPERATOR for IMS

MAINVIEW AutoOPERATOR for IMS (also referred to simply as AutoOPERATOR for IMS) provides:

- IMS events to the Rule Processor for automation
- IMS operations control through an interactive application that consolidates operations activity for IMS
- IMS resource control through online menus and applications with simple line commands to control IMS resources and activity
- An interactive interface to IMF applications and services

To control IMS operations, use the MAINVIEW AutoOPERATOR menus and applications. The SPF-like dialog is a set of menus and applications that the master terminal operator (MTO) uses to control IMS operation. The applications display the current IMS resources or IMS activity and any exceptions to normal activity. The MTO uses the applications to change the resources with a one- or two-character line command or to invoke MAINVIEW AutoOPERATOR EXECs that perform a group of IMS or MVS commands.

When you enter a line command in an application, MAINVIEW AutoOPERATOR responds by issuing the appropriate IMS command for that resource. The operator does not need to know the full IMS command. The application displays the short line commands that can be used. MAINVIEW AutoOPERATOR records the changed status on the panel when the change occurs.

EXECs can respond automatically to IMS or IMF messages or be invoked by the time of day or the IMF user. EXECs are user-written programs that you can write to perform automation tasks on your system. See the *MAINVIEW AutoOPERATOR Advanced Automation Guide for CLIST EXECs* or the *MAINVIEW AutoOPERATOR Advanced Automation Guide for REXX EXECs* for more information about EXECs, writing EXECs, and EXEC processing.

The applications are best summarized by looking at Options 1 to 6 on the IMS OPERATOR WORKSTATION panel:

| | | | |
|---|-------------|-----------------------------------|--------------------|
| BMC Software ----- | | IMS OPERATOR WORKSTATION ----- | AutoOPERATOR |
| OPTION | ====> | | DATE -- 01/02/01 |
| | | | TIME -- 12: 51: 56 |
| | | | USERID -- BAOMXY2 |
| | | | MODE -- ISPF 4. 8 |
| 1 | STATUS | - Display Status of an IMS System | |
| 2 | NETWORK | - Display/Modify LINE/TERM/NODE | |
| 3 | DATABASE | - Display/Modify DATABASE | |
| 4 | TRANSACTION | - Display/Modify TRANCODE | |
| 5 | PROGRAM | - Display/Modify PROGRAM | |
| 6 | REGIONS | - Display/Modify IMS REGION | |
| X | EXIT | - Terminate | PF1/13: HELP |
| | | | PF3/15: EXIT |
| Copyright 2000, BMC Software, Inc. All rights reserved. | | | |

Figure 54. IMS OPERATOR WORKSTATION Panel

Controlling the IMS Environment

MAINVIEW AutoOPERATOR application menus and panels display IMS resources or operation status for online monitoring and modification. Line commands that change the status are described for each application in the following chapters.

IMS Resource Control

MAINVIEW AutoOPERATOR resource applications display panels show the IMS status for:

- Network resources (Option 2)
- Databases (Option 3)
- Transactions (Option 4)
- Programs (Option 5)

NETWORK Application

Option 2 displays information about BTAM communication lines, VTAM nodes, logical terminals, or ISC links. The information is selected from a NETWORK menu and is displayed as a scrollable list as follows:

- **BTAM LINES application** shows the:
 - Number of BTAM communication lines connected to IMS
 - Symbolic name of the device
 - Number of physical terminals
 - Number of physical terminal input messages
 - Number of physical terminal output messages
 - Number of queued messages
 - Line status
- **VTAM NODES application** shows the:
 - Node name (VTAM logical unit)
 - First LTERM assigned to the node
 - VTAM terminal device type
 - Number of messages received from the node
 - Number of messages sent to the node
 - Number of messages still enqueued to the assigned LTERM for the node
 - VTAM node status

- **LTERMS application** shows the:
 - Logical terminal (LTERM) name
 - Node (VTAM logical unit) name of an LTERM
 - Physical line (PLINE) number
 - Physical terminal number
 - Number of physical terminal input messages
 - Number of physical terminal output messages
 - LTERM status
- **ISC LINKS application** shows the:
 - Link name (VTAM addressable unit)
 - Subpool name
 - Remote session with which the link is in session
 - Messages received over the link
 - Messages sent over the link
 - Messages still enqueued for the link
 - ISC link status

DATABASE Application

Option 3 displays information about all the DL/I and Fast Path databases defined for your IMS. The Fast Path database application information is described in “IMS Fast Path Resource Control” on page 226. The DL/I application is a scrollable list for all the databases defined to IMS that shows the:

- Database name and its data set organization
- Database type
- Local database number
- status

TRANSACTION Application

Option 4 displays information about the current IMS transactions and Fast Path routing codes. The Fast Path routing codes are described in “IMS Fast Path Resource Control” on page 226. The TRANSACTION application is a scrollable list that shows the:

- Transaction name
- IMS transaction type
- Scheduling class
- Total number of messages enqueued
- Remaining number of messages in the message queue
- Current priority of the transaction
- Transaction limit priority
- Transaction status

PROGRAM Application

Option 5 shows a scrollable list of the IMS application programs. It displays:

- The name of each program and its type (message processing, batch message processing, or Fast Path)
- Current status

IMS Fast Path Resource Control

You can display a Fast Path resource status by selecting the DATABASE or TRANSACTION application, described below, from the IMS OPERATOR WORKSTATION panel.

- DATABASE (Option 3)

This option displays a menu from which you can select four applications:

- The **DL/I DATABASE application** shows a scrollable list by database name, organization, type, local number, and status.
- The **MAIN STORAGE DATABASE (MSDB) application** shows a scrollable list of the MSDBs by name, the type (terminal-related, dynamic (MSRD); terminal-related, fixed (MSRF); nonterminal-related (MSNR)), MSDB virtual storage allocation, usage, and status.
- The **DATA ENTRY DATABASE (DEDB) application** shows a scrollable list of the DEDBs by name, the number of areas defined for each DEDB, and current status.

- The **AREA application** shows a scrollable list of the DEDB areas by name, the DEDB name, the number of area data sets (ADS), the percentage of sequential dependent and independent overflow used, any active utility, and the current status of the area.

The DEDB AREA detailed display shows the DEDB name, the area name, the VSAM Control Interval (CI) size, and the amount of available space (free CIs). It also lists the area data sets (ADSs) by ddname and shows the number of Error Queue Elements (EQE) used, the first volume and device address, and the ADS status.

- TRANSACTION (Option 4)

From the TRANSACTION menu you can select a ROUTING CODE application. This shows a scrollable list of current routing codes by name, the associated Fast Path message-driven program and balancing group (one BALG per each unique Fast Path program), the number of regions processing the balancing group, the number of transactions queued and dequeued by the balancing group, and the routing code status.

IMS Operations Control

The IMS operations are controlled with:

- An IMS status and exception display (Option 1)

The STATUS/EXCEPTION application displays current IMS activity and exceptions to normal activity divided into a STATUS area and an EXCEPTION area. Warning messages that identify IMS exceptions are shown in the EXCEPTION area.

The STATUS area shows the number of active message processing regions, batch message processing regions, Fast Path regions, the number of transactions processed and waiting to be processed, and two graphs. One graph indicates CPU and control region busy percentages and message queue utilization. The other graph represents response times for the first three IMF workload monitors that were started.

- A REGIONS application that shows current, active IMS regions (Option 6)

The REGIONS application displays the number of active and scheduled message processing, batch message processing, and Fast Path regions and the number of transactions queued per region, and a scrollable list of regions. The list displays the OS jobname for each region; the region type as MPP (message processing or Fast Path mixed mode), BMP (batch message processing), FPU (Fast Path Utility), MDP (message-driven Fast Path), IFP (nonmessage-driven Fast Path); the transaction code; the LTERM; class and program of the work in progress; the region ID; the real storage in use; the number of real I/Os; and the cumulative CPU time for the region.

- An Journal display that shows all current IMS messages sent to the MTO as well as BBI messages and IMS commands (highlighted) and command responses. The log can be browsed online with the LOG DISPLAY application.
- User-written EXECs that group predefined IMS, MVS, and IMF commands together for subsequent execution.

Viewing IMS and BBI Messages (LOG DISPLAY Application)

All commands and messages issued by IMS and MAINVIEW AutoOPERATOR are logged to the online BBI-SS PAS Journal log. This Journal log can be browsed or printed from the MAINVIEW AutoOPERATOR terminal session for IMS operational problem diagnosis and resolution. Browsing is done from the BBI LOG DISPLAY application, as described in the *MAINVIEW AutoOPERATOR Basic Automation Guide*.

Log Maintenance Procedures (BBIDLOGA, BBIDLOGB)

MAINVIEW AutoOPERATOR for IMS uses two online logs, the BBI-SS PAS Journal log and the BBI-SS PAS Image log. Each log has dual data sets. The BBI-SS PAS Journal log records all BBI messages and IMS messages. The BBI-SS PAS Image log records screen images produced by the IMF analyzer and monitor products for offline printing.

The BBSAMP data set contains BMC Software-supplied BBIDLOGA and BBIDLOGB procedures. When a log is full, MAINVIEW AutoOPERATOR switches to the alternate log. BBIDLOGA is automatically scheduled to submit a batch job to print and reset a full BBI-SS PAS Journal log. BBIDLOGB is automatically scheduled to submit a batch job to print the BBI-SS PAS Image log data sets.

Modifying Sample EXECs (BBUSER Members)

The BBUSER data set contains sample user-written EXECs that have been used in production systems. You can modify these or create your own EXECs as members of BBUSER, as described in the *MAINVIEW AutoOPERATOR Advanced Automation Guide for CLIST EXECs* and *MAINVIEW AutoOPERATOR Advanced Automation Guide for REXX EXECs*. After thoroughly testing an EXEC in your own environment, make it a member of the BBPROC data set so that you can execute it.

The distributed BBUSER EXECs (see Appendix B, “BBUSER Library EXEC Index” on page 365):

- Manage application resources, such as transactions, programs, and databases.
- Manage network resources.
- Perform IMS operational procedures.
- Respond to IMS messages.
- Process IMS, MVS, or BBI system, job, and time data and issue commands.

For example, it can start a region at a specific time of day within a timed interval.

Resource Exception Command

When a resource application is selected, the application displays the status of all the resources, including those that are not operating normally (exceptions). You can enter a resource exception command, `X {ON|OFF}`, to display only the resource exceptions or to display all the resources on any resource application. The default is `X OFF`, which displays all the resources defined to IMS for that application.

For example,

```
COMMAND ==> X ON
```

entered from the AREA application causes the application to display only those DEDB areas that have a status of `RECOVERY NEEDED` or `STOPPED`. If you enter `LT` in the `COMMAND` field to temporarily transfer to the `LTERMS` application, the `LTERMS` application is displayed with `X ON`. If you then reset `X ON` to `OFF` from `LTERMS` and return to `AREAS`, the `AREAS` application contains the original data before application transfer, including the value you set for the resource exception command. Pressing `ENTER` displays the current values. `X ON` remains on for application transfer until you enter `X OFF`.

Chapter 14. NETWORK Applications

Select the NETWORK option, shown in Figure 55, from the IMS OPERATOR WORKSTATION panel.

| | | | | |
|--------------|-----------|---------|-------------------|--------------------|
| BMC Software | ----- | NETWORK | ----- | AutoOPERATOR |
| OPTION | ====> | | | DATE -- 01/03/16 |
| | | | | TIME -- 10: 00: 35 |
| 1 | LINES | - | Di spl ay/Modi fy | IMS LINES |
| 2 | NODES | - | Di spl ay/Modi fy | VTAM NODES |
| 3 | LTERMS | - | Di spl ay/Modi fy | IMS LTERMS |
| 4 | ISC LINKS | - | Di spl ay/Modi fy | ISC LINKS |

Figure 55. NETWORK Menu

The NETWORK option comprises a menu and set of applications. Use the menu to select an application to manage the:

- BTAM communication lines
- VTAM network nodes
- IMS logical terminals (LTERMs)
- Network ISC links

Managing BTAM Communication Lines

Select the BTAM LINES application, shown in Figure 56, from the NETWORK option menu.

```
BMC Software ----- BTAM LINES ----- AUTOOPERATOR
COMMAND ==> TGT ==> IMS130
LC CMDS ==> I, IN, P, S, R, RO
LC  LINE  -DEVICE TYPE-- #TERM  INPUT OUTPUT QUECNT ----- STATUS -----
      1  SYSTEM CONSOLE    1      1     26      0  LINE OPERATI ONAL
      2  TWX                1      0      0      0  STOPPED
      3  DIAL               7      0      0      0  STOPPED
      4  TWX                1      0      0      0  STOPPED
      5  DIAL               7      0      0      0  STOPPED
      6  2740 MOD1         1      0      0      0  STOPPED
***** END OF LINES *****
```

Figure 56. BTAM LINES Application

This application displays a scrollable list of the switched and nonswitched communication lines connected to physical terminals. The application shows for each line: its line number, symbolic device type name, physical terminal number, physical terminal input message count, physical terminal output message count, queue message count, and current status.

Use the application to monitor or change a line's status as follows:

| Column | Description |
|-------------|---|
| LC | The line command field. Enter any of the following 1- or 2-character line command for the line you want to change: Line Command MAINVIEW AutoOPERATOR Action I Issues the /IDLE LINE command to immediately terminate the communication, which stops message sending, receiving, and queuing. Partially processed input messages are discarded and output messages are returned to the message queues. IN Issues the /IDLE LINE NOSHUT command to immediately terminate input to and output from 3270 remote BTAM lines without a checkpoint shutdown. P Issues the /STOP LINE command to stop the sending, receiving, or queuing of output messages to the line, but the line is not stopped until it is stopped and idle. S Issues the /START LINE command to make an idle, stopped, or pstopped line available for use. R Issues the /RSTART LINE command to start a line in the condition it was before it was stopped. RO Issues the /RSTART LINE OPEN command to enable a stopped and idle remote BTAM line. |
| DEVICE TYPE | The symbolic name for the device type. |

| | |
|---------------|--|
| #TERM | The number of physical terminals connected to the line. |
| INPUT | The number of input messages to the physical terminal. |
| OUTPUT | The number of output messages from the physical terminal. |
| QUECNT | The number of messages remaining in the message queue. |
| STATUS | The current line status, which can be: |
| | LINE OPERATIONAL |
| | The line is available. |
| | STOPPED |
| | The /STOP LINE command was issued. |
| | INPUT STOPPED |
| | The /STOP LINE, /PURGE LINE, or /PSTOP LINE command was issued. |
| | OUTPUT STOPPED |
| | The /STOP LINE, /PURGE LINE, or /PSTOP LINE command was issued. |
| | QUEUING STOPPED |
| | The /STOP LINE, /PURGE LINE, or /PSTOP LINE command was issued. |
| | PSTOPPED |
| | The /PSTOP LINE command was issued. All messages sent to or received from a line are stopped. Message queuing continues. |
| | PURGING |
| | The /PURGE LINE command was issued. |
| | IDLE |
| | The /IDLE LINE or /IDLE LINE NOSHUT command was issued. The line is terminated. |

Exceptions off (X OFF) is the default. All lines are displayed, including those that are an exception to normal operation. If X ON is entered in the primary command field as described in “Resource Exception Command” on page 229, only the lines in an exception to normal operation are shown. The exception status can be:

STOPPED
 INPUT STOPPED
 OUTPUT STOPPED
 QUEUING STOPPED
 PSTOPPED
 PURGING
 IDLE

Managing VTAM Nodes

Select the VTAM NODES application, shown in Figure 57, from the NETWORK option menu.

Important Note

This application is not available if the target is a DBCTL address space.

| | | | | | | | | | | | |
|--|---------|---------|------------|------------|------|------|---------------|----------------|--|--|--|
| BMC Software | | | | VTAM NODES | | | | AUTOOPERATOR | | | |
| COMMAND ==> | | | | | | | | TGT ==> IMS130 | | | |
| LC CMDS ==> P, S, I, A, F, L, U, O, C, R, PU | | | | | | | | | | | |
| LC | NODE | LTERM | DEV TYPE | RECD | SENT | QCNT | STATUS | | | | |
| | LOD6 | LL0D6 | 3270 VTAM | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LOD7 | LL0D7 | 3270 VTAM | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LOD8 | LL0D8 | 3270 VTAM | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LOD9 | LL0D9 | 3270 VTAM | 0 | 0 | 0 | OPERATIONAL | | | | |
| | LODA | LL0DA | 3270 VTAM | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LODB | LL0DB | 3270 VTAM | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LODC | LL0DC | 3270 VTAM | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LODD | LL0DD | 3270 VTAM | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LO9E | SECMAS | 3284/3286 | 0 | 0 | 5 | NOT CONNECTED | | | | |
| | LO9F | PRINT2 | 3284/3286 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LODE | PRINT3 | 3284/3286 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LODF | PRINT4 | 3284/3286 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LSNAA01 | SNAPA01 | SLU TYPE 2 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LSNAA02 | SNAPA02 | SLU TYPE 2 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LSNAA03 | SNAPA03 | SLU TYPE 2 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LSNAA04 | SNAPA04 | SLU TYPE 2 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LSNAA05 | SNAPA05 | SLU TYPE 2 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LSNAA06 | SNAPA06 | SLU TYPE 2 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LSNAA07 | SNAPA07 | SLU TYPE 2 | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | LSNAA08 | SNAPA08 | SLU TYPE 2 | 0 | 0 | 0 | NOT CONNECTED | | | | |

Figure 57. VTAM NODES Application

This application displays a scrollable list of the VTAM nodes. The application shows the node name, the LTERM assigned to the node, the VTAM terminal device type, the messages received and sent per node, the number of messages to be queued per node, and the current node status.

Use the application to monitor or change a node's status as follows:

| Column | Description |
|---|---|
| LC | The line command field. Enter any of the following 1- or 2-character line command for the node you want to change: |
| Line Command MAINVIEW AutoOPERATOR Action | |
| P | Issues /STOP NODE to stop message queuing for the VTAM node and the sending or receiving of messages over the node. The currently connected terminal is disconnected. |
| S | Issues /START NODE to accept a LOGON from a VTAM-attached terminal only if the node is disconnected, idle, or stopped. |

| | |
|-----------------|---|
| I | Issues the ACF/VTAM command VARY NET,INACT to deactivate a minor node. |
| A | Issues the ACF/VTAM command VARY NET,ACT to make a minor node available to the network. |
| F | Issues the ACF/VTAM command VARY NET,INACT,F to deactivate a minor node. The node is immediately deactivated without the terminal being deallocated. LIssues /LOCK LTERM to stop the sending of application program output, which affects the LTERM associated with the physical input terminal. |
| U | Issues /UNLOCK LTERM to free the LTERM previously locked by /LOCK LTERM. |
| O | Issues /OPNDST to connect IMS to the VTAM terminal (open node for IMS VTAM terminal session). |
| C | Issues /CLSDST to disconnect IMS from VTAM terminal (close node for IMS VTAM terminal session). |
| R | Issues /RSTART NODE to start the node with the previous conditions it had before it was stopped. |
| PU | Issues /PURGE LTERM to stop input for the LTERM. Messages can still be scheduled. |
| NODE | The name of the VTAM node (VTAM network addressable unit). |
| LTERM | The first LTERM assigned to the node. |
| DEV TYPE | The type of VTAM terminal. |
| RECD | The number of messages received by the node. |
| SENT | The number of messages sent by the node. |
| QCNT | The number of messages still enqueued for all the LTERMs assigned to the node. |
| STATUS | The current node status, which can be: OPERATIONAL The node is available. WTOR DEVICE The physical terminal associated with the LTERM is a WTOR device. STOPPED /STOP NODE or /PURGE LTERM was issued. PSTOPPED |

/PSTOP LTERM was issued. All messages sent to or received from a node are stopped. Message queuing continues.

LTERM LOCKED FROM /LOCK

/LOCK LTERM was issued.

QUEUE I/O ERROR

There is an I/O error. IMS cannot send output messages.

PURGING

/STOP NODE, /PSTOP LTERM, or /PURGE LTERM was issued.

NOT CONNECTED

The physical terminal is not connected.

IN SESSION

The LTERM is allocated to the LU6 session.

Exceptions off (X OFF) is the default. All nodes are displayed, including those that are an exception to normal operation. If X ON is entered in the primary command line as described in “Resource Exception Command” on page 229, only the nodes in an exception to normal operation are shown. The exception status can be:

STOPPED
PSTOPPED
LTERM LOCKED FROM /LOCK
QUEUE I/O ERROR
PURGING

Managing IMS Logical Terminals (LTERMS)

Select the LTERMS application, shown in Figure 58, from the NETWORK option menu.

| | | | | | | | | | | | |
|--|-----------|--------|------|--------|-------|--------|--------------------|----------------|--|--|--|
| BMC Software | | | | LTERMS | | | | AutoOPERATOR | | | |
| COMMAND ==> | | | | | | | | TGT ==> IMS130 | | | |
| LC CMDS ==> P, S, PU, I, A, F, R, L, U | | | | | | | | | | | |
| LC | LTERM | NODE | LINE | TERM | INPUT | OUTPUT | ----- STATUS ----- | | | | |
| | A1QAAI 1A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QAA01A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QBBI 1A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QBB01A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QCCI 1A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QCC01A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QDDI 1A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QDD01A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QEEI 1A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QEE01A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QFFI 1A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QFF01A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QGGI 1A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QGG01A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QHHI 1A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | A1QHH01A | | | | 0 | 0 | UNALLOCATED | LU6 | | | |
| | BOLD0 | BOLD0 | 39 | 1 | 0 | 0 | NOT CONNECTED | | | | |
| | BOLD1 | BOLD1 | 40 | 1 | 0 | 0 | NOT CONNECTED | | | | |
| | BOLD10 | BOLD10 | 49 | 1 | 0 | 0 | NOT CONNECTED | | | | |
| | BOLD11 | BOLD11 | 50 | 1 | 0 | 0 | NOT CONNECTED | | | | |

Figure 58. LTERMS Application

This application displays a scrollable list of logical terminals (LTERMS). The application shows the LTERM name, the node for the LTERM, the physical line number, the physical number of the terminal, the number of physical terminal input and output messages, and the current status.

Use the application to monitor or change an LTERM's status as follows:

| Column | Description |
|--------|---|
| LC | The line command field. Enter any of the following 1- or 2-character line command for the LTERM you want to change: Line Command MAINVIEW AutoOPERATOR Action P Issues /STOP LTERM to stop output message queuing for the LTERM from other terminals and the sending or receiving of messages by the LTERM. S Issues /START LTERM to start the LTERM. PU Issues /PURGE LTERM to stop input for the LTERM. Messages can still be sent to the terminal. I Issues ACF/VTAM command VARY NET,INACT to deactivate LTERM. A Issues ACF/VTAM command VARY NET,ACT to make LTERM available to the network. |

| | |
|----------|---|
| F | Issues ACF/VTAM command VARY NET,INACT F to immediately deactivate LTERM. |
| R | Issues /RSTART LTERM to start the LTERM with the previous conditions it had before it was stopped. |
| L | Issues /LOCK LTERM to stop the sending of application program output which affects the LTERM associated with the physical input terminal. |
| U | Issues /UNLOCK LTERM to free the LTERM previously locked by /LOCK LTERM. |

| | |
|--------------------------------|--|
| LTERM | The name of the LTERM. |
| NODE | The name of the VTAM node (VTAM network addressable unit). |
| LINE | The number of the physical line (PLINE) attached to the terminal. |
| TERM | The physical number of the terminal (PTERM). |
| INPUT | The number of physical terminal input messages. |
| OUTPUT | The number of physical terminal output messages. |
| STATUS | The current LTERM status, which can be: |
| OPERATIONAL | The LTERM is available. |
| WTOR DEVICE | The physical terminal associated with the LTERM is a WTOR device. |
| STOPPED | /STOP LTERM or /PURGE LTERM was issued. |
| PSTOPPED | /PSTOP LTERM was issued. All messages sent to or received from the LTERM are stopped. Message queuing continues. |
| LTERM LOCKED FROM /LOCK | /LOCK LTERM was issued. |
| QUEUE I/O ERROR | There is an I/O error. IMS cannot send output messages. |
| PURGING | /STOP LTERM, /PSTOP LTERM, or /PURGE LTERM was issued. |
| NOT CONNECTED | The physical terminal is not connected. |
| IN SESSION | The LTERM is allocated to the LU6 session. |
| UNALLOCATED LU6 | The LU6 session is not allocated. |
| STATIC | The LTERM is statically defined to IMS. |

UNALLOCATED DYNAMIC

This terminal was created dynamically by the IMS 4.1 ETO and is not allocated to a node.

Exceptions off (X OFF) is the default. All LTERMs are displayed, including those that are an exception to normal operation. If X ON is entered in the primary command line as described in “Resource Exception Command” on page 229, only the LTERMs in an exception to normal operation are shown. The exception status can be:

STOPPED
PSTOPPED
LTERM LOCKED FROM /LOCK
QUEUE I/O ERROR
PURGING

For dynamic terminals created by the IMS 4.1 Extended Terminal Option (ETO), ISTAT may not show the dynamic terminals immediately.

LTERMS are organized by an IMS 4.1 hashing algorithm. IMF and MAINVIEW AutoOPERATOR services present LTERMS and nodes alphabetically. To do this, these products use an index table to sort them. The table is refreshed according to a specified refresh interval and only when LTERM/node displays are requested. The default refresh interval is 10 seconds. If the time since the last refresh is greater than 10 seconds, the table is updated. Service requests that occur prior to the interval expiration do not show dynamic terminals created during the interval.

The refresh interval determines how soon dynamic terminals are displayed by ISTAT. Short refresh intervals allow them to be displayed sooner but may consume more resources because the table is updated more frequently. Longer refresh intervals may consume less resources but may delay the display of recently created dynamic terminals.

The amount of resources consumed by sorting depends on the size of your site's terminal network. To change the refresh interval, use the CBSINTVL parameter in BBPARM member BBIISP00. For the new value to take effect, you must restart the BBI-SS PAS.

By default, the index table uses 200K of BBI-SS PAS extended private area storage. You can use the CBSORTSZ parameter in BBPARM member BBIISP00 to change this value. Each terminal entry requires 12 bytes (8 bytes for the terminal ID name and 4 bytes for the address of either the CNT or the CLB control block).

Managing ISC Links

Select the ISC LINKS application, shown in Figure 59, from the NETWORK option menu.

Important Note

This application is not available if the target is a DBCTL address space.

| | | | | | | | | | | | |
|---------------------------------|----------|----------|----------|-----------|------|------|--------------------|----------------|--|--|--|
| BMC Software | | | | ISC LINKS | | | | AutoOPERATOR | | | |
| COMMAND ==> | | | | | | | | TGT ==> IMS130 | | | |
| LC CMDS ==> P, R, S, O, C, I, A | | | | | | | | | | | |
| LC | NODE | SUBPOOL | ---ID--- | RECD | SENT | QCNT | ----- STATUS ----- | | | | |
| | A1ABIMSC | L1WA1101 | NONE | 4 | 10 | 2 | IN SESSION | | | | |
| | A1ABIMSC | L1WA1001 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1102 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1002 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1003 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1003 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1004 | NONE | 2 | 5 | 4 | OPERATI ONAL | | | | |
| | A1ABIMSC | L1WA1004 | NONE | 1 | 2 | 0 | OPERATI ONAL | | | | |
| | A1ABIMSC | L1WA1005 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1005 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1006 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1006 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1007 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1007 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1008 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1ABIMSC | L1WA1008 | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1AAIMSF | | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1AAIMSF | | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1AAIMSF | | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |
| | A1AAIMSF | | NONE | 0 | 0 | 0 | NOT CONNECTED | | | | |

Figure 59. ISC LINKS Application

This application displays a scrollable list of ISC links. The application shows the link name, the subpool name, the remote system ID, the messages received, sent, and enqueued per ISC link, and the current status of each link.

Use the application to monitor or change the status of an ISC link as follows:

| Column | Description | | | | | | |
|--------------|---|--------------|------------------------------|---|---|---|---|
| LC | The line command field. Enter one of the following 1-character line command for the link you want to change: <table><tr><th>Line Command</th><th>MAINVIEW AutoOPERATOR Action</th></tr><tr><td>P</td><td>Issues /QUIESCE NODE P1 SUBPOOL P2 to stop communication through the link. The subpool associated with the VTAM node is shutdown and deallocated.</td></tr><tr><td>R</td><td>Issues /RSTART NODE P1 SUBPOOL P2 to start link with the conditions it had before it was stopped.</td></tr></table> | Line Command | MAINVIEW AutoOPERATOR Action | P | Issues /QUIESCE NODE P1 SUBPOOL P2 to stop communication through the link. The subpool associated with the VTAM node is shutdown and deallocated. | R | Issues /RSTART NODE P1 SUBPOOL P2 to start link with the conditions it had before it was stopped. |
| Line Command | MAINVIEW AutoOPERATOR Action | | | | | | |
| P | Issues /QUIESCE NODE P1 SUBPOOL P2 to stop communication through the link. The subpool associated with the VTAM node is shutdown and deallocated. | | | | | | |
| R | Issues /RSTART NODE P1 SUBPOOL P2 to start link with the conditions it had before it was stopped. | | | | | | |

| | |
|--------------------------------|---|
| S | Issues /START NODE P1 SUBPOOL P2 to start half-session allocated to subpool P2 for node P1. |
| O | Issues /OPNDST NODE P1 SUBPOOL P2 ID P3 to open nodes defined with subpools P2 for node P1. Node must be disconnected, idle, or stopped. |
| C | Issues /CLSDST NODE P1 SUBPOOL P2 to terminate half-sessions of the ISC node allocated to the specified subpool. The subpools are not deallocated from the session. |
| I | Issues ACF/VTAM command VARY NET,INACT to deactivate link and make it unavailable to the network. |
| A | Issues ACF/VTAM command VARY NET,ACT to make link available to the network. |
| NODE | The name of the link (VTAM network addressable unit). |
| SUBPOOL | The name of the LTERM that is allocated to the ISC node. |
| ID | The remote system with which the link is in session. |
| RECD | The number of messages received by the link. |
| SENT | The number of messages sent by the link. |
| QCNT | The number of messages still enqueued to the link. |
| STATUS | The current ISC link status, which can be: |
| OPERATIONAL | The link is available. |
| STOPPED | /QUIESCE NODE P1 SUBPOOL P2 was issued. |
| LTERM LOCKED FROM /LOCK | /LOCK LTERM was issued. |
| NOT CONNECTED | The physical terminal is not connected. |
| IN SESSION | The LTERM is allocated to the LU6 session. |
| SESSION ERROR | The LU6 session is not allocated. |

Exceptions off (X OFF) is the default. All nodes are displayed, including those that are an exception to normal operation. If X ON is entered in the primary command line as described in "Resource Exception Command" on page 229, only the nodes in an exception to normal operation are shown. The exception status can be:

STOPPED
LTERM LOCKED FROM /LOCK
SESSION ERROR

Chapter 15. DATABASE Applications

Select the DATABASE option, shown in Figure 60, from the IMS OPERATOR WORKSTATION Panel.

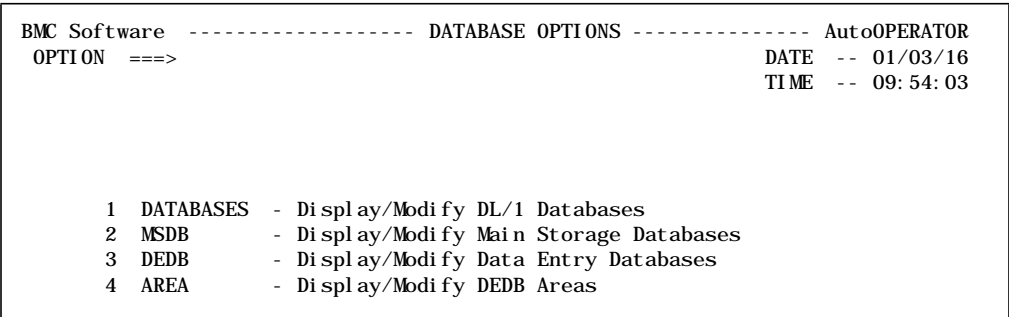


Figure 60. DATABASE Menu

The DATABASE option comprises a menu and set of applications. Use the menu to select an application to manage:

- All the databases defined for your IMS.
- Fast Path main storage databases (MSDB)
- Fast Path data entry databases (DEDB)
- Fast Path DEDB areas and area data sets

Managing All the Databases

Select the DL/I application, shown in Figure , from the DATABASE OPTIONS menu.

| | | | | |
|----------------|----------------|-------------------------------------|-----------|--------------------------|
| BMC Software | ----- | DATABASE | ----- | AutoOPERATOR |
| COMMAND ==> | | | | TGT ==> IMS71Y |
| LC CMDS ==> P, | PG, S, SG, DR, | RG, DD, DG, DF, FG, DV, VG, L, U, ? | | |
| LC | DATABASE | DATASET ORG | TYPE LNUM | ----- STATUS ----- |
| | BE1PARTS | DMB NOT AVAIL | DL/I 1 | STO, NOTOPEN, NOTINIT |
| | BE2ORDER | DMB NOT AVAIL | DL/I 2 | STO, NOTOPEN, NOTINIT |
| | BE2ORDRX | DMB NOT AVAIL | DL/I 3 | STO, NOTOPEN, NOTINIT |
| | BE2PCUST | DMB NOT AVAIL | DL/I 5 | NOTOPEN, NOTINIT, ALLOC+ |
| | BE3ORDER | DMB NOT AVAIL | DL/I 6 | NOTOPEN |
| | BE3ORDRX | DMB NOT AVAIL | DL/I 7 | NOTOPEN |
| | BOOINP01 | DMB NOT AVAIL | DL/I 10 | STO, NOTOPEN, NOTINIT |
| | CUSTHDAM | DMB NOT AVAIL | DL/I 13 | NOTOPEN |
| | CYTDBDI1 | DMB NOT AVAIL | DL/I 18 | STO, NOTOPEN, NOTINIT |
| | CYTDBD01 | DMB NOT AVAIL | DL/I 19 | STO, NOTOPEN, NOTINIT |
| | DBFSAMD1 | FAST PATH | MSDB 23 | OPEN, EEQE |

Figure 61. DL/I DATABASE Application

This application shows a scrollable list of all the databases by name for both DL/I and Fast Path. The list identifies the data set organization, the database type, the database number, and the status of each database. Use the DL/I application to control all the databases¹ defined for your IMS, as follows:

| Column | Description |
|--------|--|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the database you want to change: Line Command MAINVIEW AutoOPERATOR Action P Issues the /STOP DATABASE command to stop the database. PG Issues the /STOP DATABASE GLOBAL command to stop the database. The command applies to all online subsystems sharing the database. S Issues the /START DATABASE command to start the database. SG Issues the /START DATABASE GLOBAL command to start the database. The command applies to all online subsystems sharing the database. |

¹ Although Fast Path databases are shown in this application, the applications designed specifically for MSDBs and DEDBs display data that is more meaningful for those databases.

| | |
|-----------|---|
| DR | <p>Issues the /DBRECOVERY DATABASE command with NOFEOV to stop the scheduling of transactions that update or read the database. The IMS log does not switch to the next OLDS (online log data set).</p> <p>Note: This line command cannot be used for a MSDB.</p> |
| RG | <p>Issues the /DBRECOVERY DATABASE GLOBAL command with NOFEOV to stop the scheduling of transactions that update or read the database. The IMS log does not switch to the next OLDS. The command applies to all online subsystems sharing the database.</p> <p>Note: This line command cannot be used for a MSDB.</p> |
| DD | <p>Issues the /DBDUMP DATABASE command with NOFEOV to stop the scheduling of transactions or programs that update the specified database. Transactions reading that database continue. The IMS log does not switch to the next OLDS.</p> <p>Note: This line command cannot be used for a DEBD or MSDB.</p> |
| DG | <p>Issues the /DBDUMP DATABASE GLOBAL command with NOFEOV to stop the scheduling of transactions or programs that update the specified database. Transactions reading that database continue. The IMS log does not switch to the next OLDS. The command applies to all online subsystems sharing the database.</p> <p>Note: This line command cannot be used for a DEBD or MSDB.</p> |
| DF | <p>Issues the /DBRECOVERY DATABASE without NOFEOV to stop the scheduling of transactions that update or read the database. The IMS log switches to the next OLDS (online log data set).</p> <p>Note: This line command cannot be used for an MSDB.</p> |
| FG | <p>Issues the /DBRECOVERY DATABASE GLOBAL without NOFEOV to stop the scheduling of transactions that update or read the database. The IMS log switches to the next OLDS. The command applies to all online subsystems sharing the database.</p> <p>Note: This line command cannot be used for an MSDB.</p> |

| | |
|-----------|--|
| DV | Issues the /DBDUMP DATABASE command without NOFEOV. The command executes the same as /DBDUMP with NOFEOV except the IMS log switches to the next OLDS. |
| | Note: This line command cannot be used for a DEBD or MSDB. |
| VG | Issues the /DBDUMP DATABASE GLOBAL without NOFEOV. The command executes the same as /DBDUMP with NOFEOV except the IMS log switches to the next OLDS. The command applies to all online subsystems sharing the database. |
| | Note: This line command cannot be used for a DEBD or MSDB. |
| L | Issues the /LOCK DATABASE command to stop the scheduling of application programs that use the database. |
| U | Issues the /UNLOCK DATABASE command to free a database previously locked by the /LOCK command. |
| ? | Issues the /DIS DATABASE command to display additional information for a database. |

DATABASE 1- to 8-character name of the database.

DATASET ORG The IMS data set organization, which can be:

DMB NOT AVAIL

The Data Management Block (DMB) control block cannot be located. The DMB pool may be too small for the DMB or the database has not been opened yet.

ISAM CASE 1

HISAM database (one data set group).

ISAM CASE 2

HISAM database (multiple data set groups).

SSAM

Single segment sequential database

HSAM

Multiple segment sequential database

HD DIRECT

HDAM database (OSAM data set)

HD INDEXED

Data portion of HIDAM database (OSAM data sets)

| | |
|-----------------------|---|
| INDEX DATABASE | Primary index to HIDAM database (ISAM data sets). Or, secondary index to HISAM, HIDAM, or HDAM database (ISAM data sets). |
| HISAM VSAM | HISAM database (one data set group of VSAM data sets). |
| SHISAM VSAM | Single segment HISAM database (VSAM data sets). |
| VSAM INDEX-K | Primary index to HIDAM database (VSAM Keyed Sequential Data Sets (K SDS)). Or, secondary index to HISAM, HIDAM, or HDAM database (VSAM KSDS). |
| VSAM HDAM | HDAM database (VSAM Entry Sequential Data Sets (ESDS)). |
| PHDAM | Partitioned HDAM database (indicates HALDB database). |
| VSAM HIDAM | Data portion of HIDAM database (VSAM ESDS). |
| PHIDAM | Partitioned HIDAM database (indicates HALDB database). |
| VSAM INDEX-K/E | Secondary index to HISAM, HIDAM, or HDAM database (VSAM KSDS and ESDS (nonunique keys)). |
| FAST PATH | Fast Path database |
| PART | HALDB database partition |
| TYPE | The IMS database type, which can be: DL/I DL/I database MSDB Fast Path main storage database DEDB Fast Path data entry database |
| LNUM | The local Data Management Block (DMB) number from the IMS database directory. |
| STATUS | The current database status, which can be: ALLOCF Dynamic allocation for the database was unsuccessful. NOTOPEN The database is not open. STO |

| | |
|-------------------------|---|
| | The /STOP DATABASE command was issued for the database. |
| OPEN | The database is open. |
| NOTINIT | No DBD was found for the database during IMS initialization. |
| LOCK | The /LOCK DATABASE command was issued for the database. |
| EEQE | The database had a write error. |
| /DBD IN PROGRESS | The /DBDUMP DATABASE without NOFEOV was issued for the database. |
| /DBR IN PROGRESS | The /DBRECOVERY DATABASE with NOFEOV was issued for the database. |
| INQONLY | <p>Updates to the database are not allowed. The scheduling of any transactions or programs updating the database has been stopped.</p> <p>Note: When INQUIRY ONLY and NOT OPEN are both true, INQ ONLY is shown.</p> |
| NR | The database is nonrecoverable. |
| AALOCs | Indicates that database allocation was successful. |
| BACKOUT | Indicates there are incomplete backouts preventing the use of the database. |
| OFR | Indicates that the database is being brought up the current tracking level with online forward recovery. |
| RECALL | Indicates the database is in recall. |

If the total number of concurrent statuses does not fit on the panel, the character + will be displayed after the last displayed status. The additional statuses may be viewed by entering a line command of ? against the database. This line command will cause the IMS /DIS DATABASE command to be issued for the database in question.

Exceptions off (X OFF) is the default. All databases are displayed with a status, including those that are an exception to normal operation. If X ON for exceptions on is entered in the COMMAND line as described in “Resource Exception Command” on page 229, only databases in an exception to normal operation are displayed. The exception status can be:

STO
LOCK
EEQE
INQONLY
ALLOCF
BACKOUT
OFR
RECALL

Managing Fast Path Main Storage Databases (MSDB)

Select the MSDB application, shown in Figure 62, from the DATABASE options menu.

| | | | | | | | |
|--------------|----------|---|----------|--------|---------|----------------|--------------|
| BMC Software | | ----- MAIN STORAGE DATABASES ----- | | | | AutoOPERATOR | |
| COMMAND ==> | | | | | | TGT ==> IMS71Y | |
| LC CMDS ==> | | S(START), P(STOP), L(LOCK), U(UNLOCK), ?(DISPLAY) | | | | | |
| LC | DATABASE | TYPE | SEGMENTS | UNUSED | STORAGE | ----- | STATUS ----- |
| | DBFSAMD1 | MSNR | 2 | 0 | 88 | | |
| | DBFSAMD2 | MSRF | 2 | 0 | 128 | | |
| | 1VPDB4 | MSNR | 6 | 0 | 264 | LOCK | |

Figure 62. Fast Path MSDB Application

This application shows a scrollable list of the MSDB databases by name. The list identifies the MSDB type, the total number of segments, the number of unused segments, the virtual storage size, and the current status of each MSDB. Use the application to control the Fast Path Main Storage databases defined for your IMS, as follows:

| Column | Description |
|----------|---|
| LC | The line command field. Enter one of the following 1-character line command on the line of the MSDB database you want to change: <div> <div>Line Command</div> <div>MAINVIEW</div> <div>AutoOPERATOR</div> <div>Action</div> </div> <div> <div>S</div> <div>Issues the /START DATABASE command to start the MSDB.</div> </div> <div> <div>P</div> <div>Issues the /STOP DATABASE command to stop the MSDB.</div> </div> <div> <div>L</div> <div>Issues the /LOCK DATABASE command to stop the scheduling of application programs that use the MSDB.</div> </div> <div> <div>U</div> <div>Issues the /UNLOCK DATABASE command to free an MSDB previously locked by the /LOCK command.</div> </div> <div> <div>?</div> <div>Issues the /DIS DATABASE command to display additional information for a database.</div> </div> |
| DATABASE | The 1- to 8-character name of the MSDB. |
| TYPE | The type of MSDB, which can be: <div> <div>MSNR</div> <div>Nonterminal-related.</div> </div> <div> <div>MSRD</div> <div>Terminal-related, dynamic - allows insertions or deletions.</div> </div> <div> <div>MSRF</div> <div>Terminal-related, fixed - no insertions or deletions.</div> </div> |
| SEGMENTS | The total number of segments in the MSDB. |
| UNUSED | The number of unused segments in the MSDB. |
| STORAGE | The MSDB virtual storage size. If the value is less than 1K, it is displayed as the number of bytes. If the value is more than 1K, it is displayed as the number of K with one decimal point; for example 235.6K. |

STATUS

The MSDB exceptional status, which can be:

ALLOCF

Dynamic allocation for the database was unsuccessful.

EEQE

The database had a write error.

blank

Status is not displayed; the MSDB is in normal operation.

LOCK

/LOCK DATABASE command was issued for the MSDB.

STO

/STOP DATABASE command was issued for the MSDB.

NOTINIT

No DBD was found for the database during IMS initialization.

FLDOVER

Packed field overflowed.

INVPACK

Invalid data in an MSDB-packed field.

ALLOCS

Indicates that database allocation was successful.

BACKOUT

Indicates there are incomplete backouts preventing the use of the database

INQONLY

Indicates a /DBDUMP command was issued for the database.

OFR

Indicates that the database is being brought up the current tracking level with online forward recovery.

RECALL

Indicates the database is in recall.

If the total number of concurrent statuses does not fit on the panel, the character + will be displayed after the last displayed status. The additional statuses may be viewed by entering a line command of ? against the database. This line command will cause the IMS /DIS DATABASE command to be issued for the database in question.

Exceptions off (X OFF) is the default. All databases are displayed, including those that are an exception to normal operation. If the database is operating normally, a status is not displayed. If X ON is entered in the primary command line as described in “Resource Exception Command” on page 229, only the databases in an exception to normal operation are shown. The exception status can be:

LOCK
STO
FLDOVER
INVPACK
INQONLY
ALLOCF
BACKOUT
OFR
RECALL

Managing Fast Path Data Entry Databases (DEDB)

Select the DEDB application, shown in Figure 63, from the DATABASE options menu.

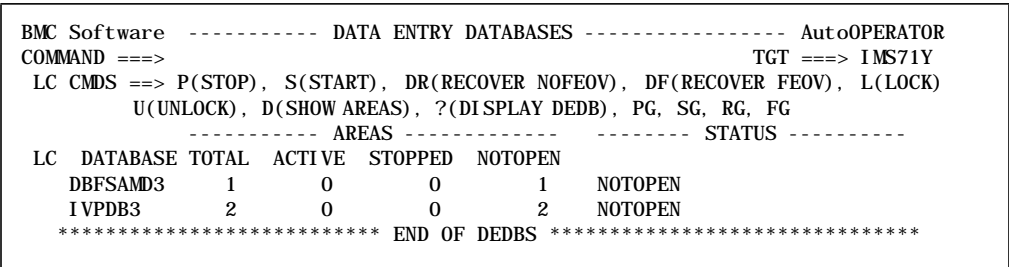


Figure 63. Fast Path DEDB Application

This application shows a scrollable list of the data entry databases defined for IMS by name. For each DEDB, the list identifies the total number of areas and the number of areas that are active, stopped, and not open and the current status of the DEDB. Use the application to control the DEDBs as follows:

| Column | Description | | | | | | | | | | | | | | | | |
|--------------|--|--------------|------------------------------|---|---|----|---|---|---|----|---|----|--|----|---|----|--|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the DEDB database you want to change: | | | | | | | | | | | | | | | | |
| | <table><tr><th>Line Command</th><th>MAINVIEW AutoOPERATOR Action</th></tr><tr><td>P</td><td>Issues the /STOP DATABASE command to stop the DEDB.</td></tr><tr><td>PG</td><td>Issues the /STOP DATABASE GLOBAL command to stop the DEDB. The command applies to all online subsystems sharing the database.</td></tr><tr><td>S</td><td>Issues the /START DATABASE command to start the DEDB.</td></tr><tr><td>SG</td><td>Issues the /START DATABASE GLOBAL command to start the DEDB. The command applies to all online subsystems sharing the database.</td></tr><tr><td>DR</td><td>Issues the /DBRECOVERY DATABASE command with NOFE OV to stop the scheduling of transactions that update or read the DEDB. The IMS log does not switch to the next OLDS (online log data sets).</td></tr><tr><td>RG</td><td>Issues the /DBRECOVERY DATABASE GLOBAL command with NOFE OV to stop the scheduling of transactions that update or read the DEDB. The IMS log does not switch to the next OLDS. The command applies to all online subsystems sharing the database.</td></tr><tr><td>DF</td><td>Issues the /DBRECOVERY DATABASE without NOFE OV to stop the scheduling of transactions</td></tr></table> | Line Command | MAINVIEW AutoOPERATOR Action | P | Issues the /STOP DATABASE command to stop the DEDB. | PG | Issues the /STOP DATABASE GLOBAL command to stop the DEDB. The command applies to all online subsystems sharing the database. | S | Issues the /START DATABASE command to start the DEDB. | SG | Issues the /START DATABASE GLOBAL command to start the DEDB. The command applies to all online subsystems sharing the database. | DR | Issues the /DBRECOVERY DATABASE command with NOFE OV to stop the scheduling of transactions that update or read the DEDB. The IMS log does not switch to the next OLDS (online log data sets). | RG | Issues the /DBRECOVERY DATABASE GLOBAL command with NOFE OV to stop the scheduling of transactions that update or read the DEDB. The IMS log does not switch to the next OLDS. The command applies to all online subsystems sharing the database. | DF | Issues the /DBRECOVERY DATABASE without NOFE OV to stop the scheduling of transactions |
| Line Command | MAINVIEW AutoOPERATOR Action | | | | | | | | | | | | | | | | |
| P | Issues the /STOP DATABASE command to stop the DEDB. | | | | | | | | | | | | | | | | |
| PG | Issues the /STOP DATABASE GLOBAL command to stop the DEDB. The command applies to all online subsystems sharing the database. | | | | | | | | | | | | | | | | |
| S | Issues the /START DATABASE command to start the DEDB. | | | | | | | | | | | | | | | | |
| SG | Issues the /START DATABASE GLOBAL command to start the DEDB. The command applies to all online subsystems sharing the database. | | | | | | | | | | | | | | | | |
| DR | Issues the /DBRECOVERY DATABASE command with NOFE OV to stop the scheduling of transactions that update or read the DEDB. The IMS log does not switch to the next OLDS (online log data sets). | | | | | | | | | | | | | | | | |
| RG | Issues the /DBRECOVERY DATABASE GLOBAL command with NOFE OV to stop the scheduling of transactions that update or read the DEDB. The IMS log does not switch to the next OLDS. The command applies to all online subsystems sharing the database. | | | | | | | | | | | | | | | | |
| DF | Issues the /DBRECOVERY DATABASE without NOFE OV to stop the scheduling of transactions | | | | | | | | | | | | | | | | |

that update or read the DEDB. The IMS log switches to the next OLDS.

FG Issues the /DBRECOVERY DATABASE GLOBAL command without NOFEOV to stop the scheduling of transactions that update or read the DEDB. The IMS log switches to the next OLDS. The command applies to all online subsystems sharing the database.

L Issues the /LOCK DATABASE command to stop the scheduling of application programs that use the DEDB.

U Issues the /UNLOCK DATABASE command to free a DEDB previously locked by the /LOCK DATABASE command.

D Displays the AREA application, shown in Figure 64, only for the database selected by the D line command.

? Issues the /DIS DATABASE command to display additional information for a database.

DATABASE The 1- to 8-character name of the DEDB.

TOTAL The total number of database areas for the DEDB.

ACTIVE The number of active areas for the DEDB.

STOPPED The number of areas stopped for the DEDB.

NOT OPEN The number of areas not opened for the DEDB.

STATUS The current DEDB status, which can be:

blank

Status is not displayed, the DEDB is in normal operation.

ALLOCF

Dynamic allocation for the database was unsuccessful.

EEQE

The database had a write error.

LOCK

The /LOCK DATABASE command was issued for the DEDB.

STO

The /STOP DATABASE command was issued for the DEDB.

NOTINIT

No DBD was found for the DEDB during IMS initialization.

NOTOPEN

The DEDB is available but not yet open. This is not an exception to normal operation.

ALLOCS

Indicates that database allocation was successful.

BACKOUT

Indicates there are incomplete backouts preventing the use of the database

INQONLY

Indicates a /DBDUMP command was issued for the database.

OFR

Indicates that the database is being brought up the current tracking level with online forward recovery.

RECALL

Indicates the database is in recall.

If the total number of concurrent statuses does not fit on the panel, the character + will be displayed after the last displayed status. The additional statuses may be viewed by entering a line command of ? against the database. This line command will cause the IMS /DIS DATABASE command to be issued for the database in question.

Exceptions off (X OFF) is the default. All databases are displayed, including those that are an exception to normal operation. If a database is operating normally, a status is not displayed. If X ON for exceptions on is entered in the primary command line as described in “Resource Exception Command” on page 229, only databases in an exception to normal operation are displayed. The exception status can be:

LOCK
STO
ALLOCF
INQONLY
BACKOUT
OFR
RECALL

Managing Data Entry Database (DEDB) Areas

Select the AREA application, shown in Figure 64, from the DATABASE menu to display all areas. You can also select this application from the DATA ENTRY DATABASES application with a D line command, as described in “Managing Fast Path Data Entry Databases (DEDB)” on page 253 to display the areas for only one DEDB.

| | | | | | | | | | |
|---|----------|----------|-----|----------|----------------|---------|--------------------|--|--|
| BMC Software ----- DATA ENTRY DATABASE AREAS ----- AutoOPERATOR | | | | | | | | | |
| COMMAND ==> | | | | | TGT ==> IMS71Y | | | | |
| LC CMDS: P(STOP), S(START), DR(RECOVER NOFEOV), DF(RECOVER FEOV), D(SHOW ADS) | | | | | | | | | |
| ?(DISPLAY AREA), PG, SG, RG, FG | | | | | | | | | |
| TOTAL OVFLOW SEQ DEP ACTIVE | | | | | | | | | |
| LC | AREA | DATABASE | ADS | PCT USED | PCT USED | UTILITY | ----- STATUS ----- | | |
| | CUSDB | DBFSAMD3 | 0 | 0 | 0 | | STO, NOTOPEN | | |
| | DFSIVD3A | IVPDB3 | 0 | 0 | 0 | | STO, NOTOPEN | | |
| | DFSIVD3B | IVPDB3 | 0 | 0 | 0 | | NOTOPEN | | |
| ***** END OF AREAS ***** | | | | | | | | | |

Figure 64. Fast Path AREA Application

This application shows a scrollable list of the Data Entry Databases defined for IMS by name. For each DEDB, it shows the area name, the number of area data sets (ADS), a usage percentage of independent overflow and sequential dependent control intervals, the active utility (if scheduled), and the current status of the DEDB area. Use the application to control the DEDB areas as follows:

| Column | Description |
|--------|---|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the DEDB area you want to change: Line Command MAINVIEW AutoOPERATOR Action P Issues the /STOP AREA command to stop the DEDB area, which closes the data sets for the area and deallocates them. PG Issues the /STOP AREA GLOBAL command to stop the DEDB area, which closes the data sets for the area and deallocates them. The command applies to all online subsystems sharing the database. S Issues the /START AREA command to start the DEDB area, which reallocates the DEDB area data sets. SG Issues the /START AREA GLOBAL command to start the DEDB area, which reallocates the DEDB area data sets. The command applies to all online subsystems sharing the database. DR Issues the /DBRECOVERY AREA command with NOFE OV, which stops the area, closes the data sets, and deallocates them. The IMS log does not switch to the next OLDS (online log data sets). |

| | |
|-----------|--|
| RG | Issues the /DBRECOVERY AREA GLOBAL command with NOFEOV, which stops the area, closes the data sets, and deallocates them. The IMS log does not switch to the next OLDS. The command applies to all online subsystems sharing the database. |
| DF | Issues the /DBRECOVERY AREA command without NOFEOV, which stops the area of the database, closes the data sets, and deallocates them. The IMS log switches to the next OLDS. |
| FG | Issues the /DBRECOVERY AREA GLOBAL command without NOFEOV, which stops the area, closes the data sets, and deallocates them. The IMS log switches to the next OLDS. The command applies to all online subsystems sharing the database. |
| D | Displays the AREA DETAIL application, shown in Figure 65, for the area selected by the D line command. |
| ? | Issues the /DIS AREA command to display additional information for an AREA. |

AREA

The 1- to 8-character area name.

DATABASE

The 1- to 8-character name of the DEDB that owns this area.

TOTAL ADS

The total number of area data sets for this area.

OVFLOW PCT USED

Percentage of independent overflow control intervals used.

SEQ DEP PCT USED

Percentage of sequential dependent overflow control intervals used.
N/A is displayed if sequential dependents are not defined.

ACTIVE UTILITY

The type of utility active against this area, which can be:

| | |
|----------------|--|
| REORG | DEDB Reorganization utility |
| CREATE | DEDB Create utility |
| COMPARE | DEDB ADS Compare utility |
| SCAN | DEDB sequential dependent Scan utility |
| DELETE | DEDB sequential dependent Delete utility |

STATUS

The current area status, which can be:

blank

Status is not displayed; the DEDB area is in normal operation.

RECOV

All Error Queue Elements (EQE) are used and the DEDB needs to be recovered.

STO

The /STOP AREA command was issued for the area.

NOTOPEN

The area is not yet open. This is not an exception to normal operation.

INQONLY

Indicates a /DBDUMP command was issued for the database.

IC

Indicates that image copy is in progress for that area or database by an HSSP region.

RECALL

Indicates the area is in recall.

If the total number of concurrent statuses does not fit on the panel, the character + will be displayed after the last displayed status. The additional statuses may be viewed by entering a line command of ? against the Area. This line command will cause the IMS /DIS AREA command to be issued for the area in question. The status field on this panel has a length of 19 characters (as opposed to 24 characters for all other panels).

Exceptions off (X OFF) is the default. All DEDB areas are displayed, including those that are an exception to normal operation. If the area is operating normally, a status is not displayed. If X ON is entered in the primary command line as described in "Resource Exception Command" on page 229, only the areas in an exception to normal operation are shown. The exception status can be:

RECOV
STO
IC
RECALL

Managing DEDB Area Data Sets

Select the detail display for an area, shown in Figure 65, by selecting the area with a D line command as described in “Managing Data Entry Database (DEDB) Areas” on page 256.

| | | | | |
|----------------------------------|-----------|--------------------------|-----------------------|--------------------|
| BMC Software | ----- | DEDB AREA DETAIL DISPLAY | ----- | AutoOPERATOR |
| COMMAND ==> | | | | TGT ==> IMS51X |
| DATABASE: DBFSAMD3 | | ----- | CONTROL INTERVAL DATA | ----- |
| AREA : CUSDB | | | | |
| CI SIZE : 1,024 | | | TOTAL CI's | FREE CI's |
| STATUS : | | Root addressable | 77 | |
| | | Independent overflow | 74 | 74 |
| | | Sequential Dependent | 823 | 695 |
| | | Root CIs per UOW | 5 | |
| | | Overflow CIs per UOW | 10 | |
| | | ----- | AREA DATA SETS | ----- |
| LC CMDS: P(STOP) ?(DISPLAY AREA) | | | | |
| LC DDNAME | EQES USED | UNIT | VOLUME | ----- STATUS ----- |
| CUSDB | 0 | 835B | BAB306 | FORPHAS |

Figure 65. Fast Path DEDB Area ADS Application (D Line Command, AREA Application)

The DEDB Area Detail application displays:

- The database name, the area name, the VSAM control interval (CI) size, and the DEDB area status (blank for normal operation, RECOVERY NEEDED, STOPPED, NOT OPEN as described in “Managing Data Entry Database (DEDB) Areas” on page 256).
- The DEDB area structure and amount of available space (CIs) as:
 - Number of CIs, including dependent overflow CIs, in the root addressable area.
 - Number of CIs in independent overflow and the number that are free or unused.
 - Number of sequential dependent CIs and the number that are free or unused. N/A is displayed if sequential dependent CIs are not defined.
 - Number of root CIs per unit of work (UOW).
 - Number of dependent overflow CIs per UOW.
- Area data set information.

There is a maximum of seven area data sets (ADS) per DEDB area. The area data set information is not scrollable. It lets you view the ADSs and stop one or more of them, as follows:

| Column | Description |
|--------|---|
| LC | The line command field. Enter the P line command, the only valid command for this application: Line Command MAINVIEW AutoOPERATOR Action P Issues the /STOP ADS command, which closes and deallocates the data set. |

DDNAME

The 1- to 8-character DDNAME of the area data set.

EQES USED

Number of error queue elements used. There is one for each VSAM control interval that has an I/O error. There are 10 EQEs per ADS.

UNIT

The physical device address of the first volume on which the ADS resides.

VOLUME

The volume serial number of the first volume on which the ADS resides.

STATUS

The current ADS status, which can be:

blank

Status is not displayed; the DEDB area data set is in normal operation.

SEVERR

The ADS has a severe I/O error.

FORPHAS

ADS is in the format phase of a CREATE utility.

COPPHAS

The ADS is in the copy phase of a COPY utility.

PREOPEN

Pre-open for ADS failed.

UNAVAIL

Indicates an ADS that is unavailable.

If the total number of concurrent statuses does not fit on the panel, the character + will be displayed after the last displayed status. The additional statuses may be viewed by entering a line command of ? against the Data Set. This line command will cause the IMS /DIS AREA command to be issued for the area associated with the Data Set in question.

Exceptions off (X OFF) is the default. All DEDB area data sets are displayed, including those that are an exception to normal operation. If the area is operating normally, a status is entered in the primary command line as described in "Resource Exception Command" on page 229, only the area data sets in an exception condition and the exception status are shown. The exception status can be:

SEVERR
FORPHAS
COPPHAS
PREOPEN
SEVERR

Chapter 16. TRANSACTION Applications

Select the TRANSACTION option, shown in Figure 66, from the IMS.

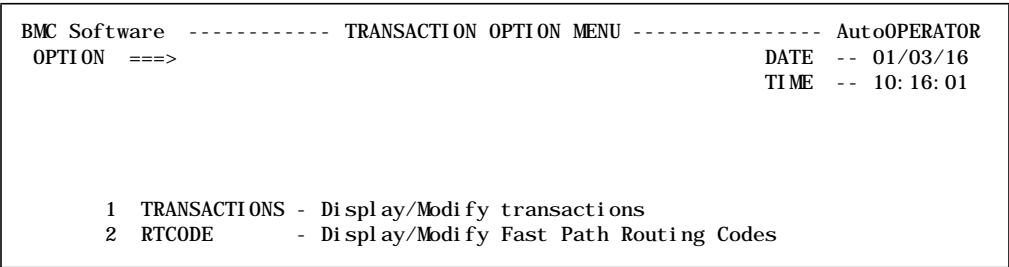


Figure 66. TRANSACTION OPTION Menu

The TRANSACTION option has a menu and set of applications. Use the menu to select an application to manage:

- IMS transactions
- Fast Path routing codes

Managing Transactions

Select the TRANSACTIONS application, shown in Figure 67, from the TRANSACTION option menu.

Important Note

This application is not available if the target is a DBCTL address space.

| | | | | | | | | | | | |
|----------------------------------|----------|------|-----|-------------|--------|----|----|----------------------------|--|--|--|
| BMC Software | | | | TRANSACTION | | | | AutoOPERATOR | | | |
| COMMAND ==> | | | | | | | | TGT ==> IMS71X | | | |
| LC CMDS ==> P, S, PU, PS, L, U ? | | | | | | | | | | | |
| LC | TRANCODE | TYPE | CLS | ENQCNT | QUECNT | CP | LP | ----- STATUS ----- | | | |
| | RESTRNB1 | BMP | 4 | 0 | 0 | 0 | 0 | STO, LOCK, TRA, BAL(001) + | | | |
| | RESTRNB2 | BMP | 4 | 0 | 0 | 0 | 0 | STO, LOCK | | | |
| | RESTRNB3 | BMP | 4 | 0 | 0 | 0 | 0 | STARTED | | | |
| | RESTRNF1 | FPE | 1 | 0 | 0 | 1 | 1 | STARTED | | | |
| | RESTRNM1 | MPP | 1 | 0 | 0 | 1 | 1 | STARTED | | | |
| | RESTRNM2 | MPP | 1 | 0 | 0 | 1 | 1 | STARTED | | | |
| | SAPTRN | MPP | 1 | 0 | 0 | 1 | 1 | STARTED | | | |
| | SYSAAPL1 | MPP | 1 | 0 | 0 | 1 | 1 | RMT | | | |
| | SYSAAPL2 | MPP | 1 | 0 | 0 | 1 | 1 | RMT | | | |
| | SYSAAPL3 | MPP | 1 | 0 | 0 | 1 | 1 | RMT | | | |
| | SYSCAPL1 | MPP | 1 | 0 | 0 | 1 | 1 | RMT | | | |
| | SYSCAPL2 | MPP | 1 | 0 | 0 | 1 | 1 | RMT | | | |
| | SYSCAPL3 | MPP | 1 | 0 | 0 | 1 | 1 | RMT | | | |
| | TBKTRNB1 | BMP | 4 | 0 | 0 | 0 | 0 | STARTED | | | |
| | TBKTRNB2 | BMP | 4 | 0 | 0 | 0 | 0 | STARTED | | | |

Figure 67. TRANSACTION Application

This application displays a scrollable list of all the IMS transactions by name. The list shows each transaction type, scheduling class, message count, priorities, and status. Use the application to control the IMS transactions, as follows:

| Column | Description |
|--|--|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the transaction you want to change: |
| Line Command MAINVIEW AutoOPERATOR Action | |
| P | Issues the /STOP TRAN command to stop the scheduling or queuing of messages containing this transaction code. |
| S | Issues the /START TRAN command to start this transaction, which allows LTERM or other program message scheduling and queuing. |
| PU | Issues the /PURGE TRAN to stop input messages destined for this transaction code. Transactions can still be scheduled. |

| | |
|-----------|---|
| PS | Issues the /PSTOP TRAN to stop the scheduling of messages containing this transaction code. The command prevents transaction scheduling after the limit count for the transaction code is reached. PS cannot stop Fast Path Exclusive (FPE) transactions, but it can stop Fast Path Potential (FPP) transactions. |
| L | Issues the /LOCK TRAN command to stop the scheduling of messages containing this transaction code. |
| U | Issues the /UNLOCK TRAN command to free a transaction code previously locked by the /LOCK TRAN command. |
| ? | Issues the /DIS TRAN command to display additional information for a transaction. |

TRANCODE

The transaction name.

TYPE

The transaction type defined to IMS, which can be as follows:

| | |
|------------|---|
| MPP | The transaction can be processed only in an IMS message processing region. |
| BMP | The transaction can be processed only in an IMS batch message processing region. |
| FPE | The transaction is Fast Path Exclusive. It can be processed only in a Fast Path message-driven (MD) region. |
| FPP | The transaction is Fast Path Potential. It can be processed in a Fast Path, MPP, or BMP region, depending upon a user-written routing exit. |

CLS

The scheduling class for the transaction.

ENQCNT

The total number of enqueued messages.

QUECNT

The remaining number of messages in the message queue.

CP

The current priority of the transaction.

LP

The limit priority of the transaction.

STATUS

The status of the transaction, which can be as follows:

STARTED

The transaction is available.

STO

The /STOP TRAN command was issued for the transaction.

PSTO

The /PSTOP TRAN command was issued for the transaction.

PUR

The /PURGE TRAN command was issued for the transaction. All input messages for the transaction are stopped.

LOCK

The /LOCK TRAN command was issued for the transaction. Message scheduling for the transaction stopped.

USTO

This trancode has been suspended because a database is not available.

SPND

The transaction is placed on the suspend queue due to ABENDU3303 in IMS (see the IBM publication *IMS Messages and Codes Reference Manual*).

RMT

The transaction is to be processed by an IMS other than the local IMS (IMS Multiple Systems Coupling).

I/O PRE

A BMP program containing GSAM cannot complete scheduling because I/O prevention has not completed. Further I/O requests to data sets are inhibited.

QERR

An I/O error has occurred on the queue for remote transaction (MSC).

BAL

An transaction is eligible for load balancing. An example of an eligible transaction would be a transaction with parallel limits specified. BAL is followed by a value in parentheses that indicates the current maximum number of regions that can be simultaneously scheduled to process the transaction.

DYN

Dynamic. A transaction was built in a shared-queues environment to allow transaction messages to be enqueued, but the transaction cannot run on the current IMS subsystem.

TRA

The transaction is being traced.

If the list of concurrent statuses does not fit on the panel, the character + will be displayed after the last displayed status. The additional statuses may be viewed by entering a line command of ? against the transaction. This line command will cause the IMS /DIS TRAN command to be issued for the transaction in question.

Exceptions off (X OFF) is the default. All transactions are displayed, including those that are an exception to normal operation. If X ON is entered in the primary command line as described in “Resource Exception Command” on page 229, only the transactions in an exception to normal operation are shown. The exception status can be:

STO
PSTO
PUR
LOCK
USTO
SPND
I/O PRE
QERR
TRA

ENQ is a primary command used only on the TRANSACTION application. Enter ENQ ON in the COMMAND field to display only the transactions that have a nonzero queue count. Enter ENQ OFF to display all the transactions.

Managing Fast Path Routing Codes

Select the FAST PATH ROUTING CODES Application, shown in Figure 68, from the TRANSACTION OPTION MENU.

Important Note

This application is not available if the target is a DBCTL address space.

| | | | | | | | | |
|-------------------------------|----------|----------|------|-------------------------|--------|------------------|--------------|--|
| BMC Software | | | | FAST PATH ROUTING CODES | | | AutoOPERATOR | |
| COMMAND ==> | | | | TGT ==> IMS130 | | | | |
| LC CMDS ==> P(STOP), S(START) | | | | | | | | |
| LC | RTCODE | PGM/BALG | RGNS | QUEUED | DEQCNT | -----STATUS----- | | |
| | BBFTRN01 | BBFPGM01 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN02 | BBFPGM02 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN03 | BBFPGM03 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN04 | BBFPGM04 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN05 | BBFPGM05 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN06 | BBFPGM06 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN07 | BBFPGM07 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN08 | BBFPGM08 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN09 | BBFPGM09 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN10 | BBFPGM10 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN11 | BBFPGM11 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN12 | BBFPGM12 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN13 | BBFPGM13 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN14 | BBFPGM14 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN15 | BBFPGM15 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN16 | BBFPGM16 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN17 | BBFPGM17 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN18 | BBFPGM18 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN19 | BBFPGM19 | 0 | 0 | 0 | NOT SCHEDULED | | |
| | BBFTRN20 | BBFPGM20 | 1 | 0 | 2 | SCHEDULED | | |

Figure 68. IMS Fast Path ROUTING CODE Application

This application displays a scrollable list of all the Fast Path routing codes by name. The list shows the associated application program. If the program is active, the balancing group (BALG) name, which is the same as the program name, is shown. The list also shows the number of regions processing the balancing group, the number of messages queued and dequeued by the balancing group, and the routing code status. Use the application as follows:

| Column | Description |
|--------|--|
| LC | The line command field. Enter one of the following line command on the line of the return code you want to change: |
| | Line Command MAINVIEW AutoOPERATOR Action |
| | P Issues the /STOP RTCODE to stop the processing of transactions for this routing code. |
| | S Issues the /START RTCODE command to start the processing of transactions for this routing code. |
| RTCODE | A 1- to 8-character routing code name. |

| | |
|-----------------|---|
| PGM/BALG | The 1- to 8-character application program name (PGM). If the program is active, this is a BALG name (same name as the program). |
| RGNS | The number of active Fast Path regions for this BALG. |
| QUEUED | The number of messages queued and waiting to be processed. Queued Fast Path transaction counts are not carried across BALG restarts. If a BALG terminates because of an operator command or restart, the statistics are lost. |
| DEQCNT | The number of messages processed by this BALG. Dequeued Fast Path transaction counts are not carried across BALG restarts. If a BALG terminates because of an operator command or restart, the statistics are lost. |
| STATUS | <p>The current routing code status, which can be as follows:</p> <p>blank</p> <p>The routing code is in normal operation but not scheduled; a status is not displayed.</p> <p>NOT SCHEDULED</p> <p>No active BALG for this routing code.</p> <p>NOT INIT</p> <p>During IMS initialization, a PSB was not found for the program associated with this routing code.</p> <p>STOPPED</p> <p>The /STOP RTCODE command code was issued for this routing code.</p> <p>SCHEDULED</p> <p>The BALG is active for this routing code.</p> <p>Exceptions off (X OFF) is the default. All routing codes are displayed, including those that are an exception to normal operation. If the area is operating normally and is not scheduled, a status is not displayed. If X ON is entered in the primary command line as described in “Resource Exception Command” on page 229, only the routing codes in an exception to normal operation are shown. The exception status can be:</p> <p>NOT SCHEDULED</p> <p>NOT INIT</p> <p>STOPPED</p> |

Chapter 17. PROGRAM Application

Select the PROGRAM application, shown in Figure 69, from the IMS.

| | | | |
|--------------|---------------|---------|--------------|
| BMC Software | ----- | PROGRAM | ----- |
| COMMAND ==> | | TGT ==> | IMS71Y |
| LC CMDS ==> | P, S, L, U, ? | | |
| LC | PROGRAM- TYPE | ----- | STATUS ----- |
| | PHI SMUPD | TP | STARTED |
| | PMSG1 | TP | STARTED |
| | PMSG1V | TP | STARTED |
| | PMSG2 | TP | STARTED |
| | PTEST01 | BMP | STARTED |
| | PTEST02 | BMP | NOTI NI T |
| | PTEST04 | BMP | STARTED |
| | PVSAMINQ | TP | STARTED |
| | PVSAMUPD | TP | STO, LOCK |
| | RBSPSBB1 | BMP | NOTI NI T |
| | RBSPSBB2 | BMP | NOTI NI T |
| | RBSPSBB3 | BMP | NOTI NI T |
| | RBSPSBF1 | FP N | NOTI NI T |
| | RBSPSBM1 | TP | NOTI NI T |
| | RBSPSBM2 | TP | NOTI NI T |
| | RESPSBB1 | BMP | NOTI NI T |

Figure 69. PROGRAM Application

This application shows a scrollable list of IMS application programs by name, identifies the application program type, and displays the current status of each program. Use the application to control the programs defined for your IMS, as follows:

| Column | Description |
|---------|--|
| LC | The line command field. Enter one of the following 1-character line command on the line of the program you want to change: Line Command MAINVIEW AutoOPERATOR Action P Issues the /STOP PROGRAM command to stop the execution of the program. S Issues the /START PROGRAM command to start the program, which makes it available for scheduling in the IMS regions. L Issues the /LOCK PROGRAM command to stop the scheduling of the program. U Issues the /UNLOCK PROGRAM command to free a program previously locked by the /LOCK command. ? Issues the /DIS PROGRAM command to display additional information for a program. |
| PROGRAM | The 1- to 8-character name of the program. |

| | |
|-------------|---|
| TYPE | The type of application program, which can be: |
| FP U | Fast Path utility |
| FP N | Nonmessage-driven Fast Path application program |
| FP M | Message-driven Fast Path application program |
| BMP | Batch message processing program |
| TP | Message processing program (MPP) |

STATUS The current status of the application program, which can be as follows:

STARTED

The program is available.

STO

The program is stopped because /STOP PROGRAM was issued.

LOCK

The program is locked because /LOCK PROGRAM was issued.

DB-STO

A database used by the PSB is stopped.

NOTINIT

No PSB was found for the program during IMS initialization.

I/O PRE

A BMP program containing GSAM cannot complete scheduling because I/O prevention has not completed. Further I/O requests to data sets are inhibited.

TRA

The program is being traced.

If the list of concurrent statuses does not fit on the panel, the character + will be displayed after the last displayed status. The additional statuses may be viewed by entering a line command of ? against the program. This line command will cause the IMS /DIS PROGRAM command to be issued for the program in question.

Exceptions off (X OFF) is the default. All programs are displayed, including those that are an exception to normal operation. If X ON is entered in the primary command line as described in "Resource Exception Command" on page 229, only the programs in an exception to normal operation are shown. The exception status can be:

STO
LOCK
DB-STO
I/O PRE
TRA

Chapter 18. STATUS/EXCEPTION Application

Select the STATUS option from the IMS for the STATUS/EXCEPTION application, shown in Figure 70.

[illegible]

Figure 70. STATUS/EXCEPTION Application

This application displays IMS status and operation exception information. You can put the application in a refresh or input mode as follows:

- Refresh

Enter the screen refresh interval in seconds from 1 to 99 in the INTVL field. The default is the INTERVAL parameter value in the BMC Software-distributed BBPROF data set member BBITSP00.

Start screen refresh by pressing the GO key (PF6 or 18) or by entering GO in the command input line. Screen refresh is indicated by the message RUN or RUNNING displayed in the STATUS field.

Data cannot be entered until you press ATTN (SNA terminal) or PA1 (non-SNA terminal), which exits refresh and enters input mode. INPUT is displayed in the STATUS field.

- Input

To enter data in the application, it must be in input mode. If the application is in refresh, press ATTN (SNA terminal) or PA1 (non-SNA terminal) for input mode. The message, INPUT, is displayed in the STATUS field.

Commands can be entered in the command line or data can be entered in the TGT or INTVL input fields. Press ENTER to display the IMS current status.

The application is divided into two parts (status and exceptions).

STATUS

Use the STATUS/EXCEPTION application to monitor the status of the target IMS environment, which shows:

- The target IMS in the TGT field, the refresh interval in seconds in the INTVL field, and the application mode status in the STATUS field (RUN and RUNNING for screen refresh or INPUT for application command entries).
- The current checkpoint ID, the checkpoint number in the CHKPT # field, and the IMS status.

The first time you access this application, the IMS STATUS PROFILE panel is displayed (see Figure 71 on page 274).

If you do not make any modifications to this panel, then **all** warnings and ALERTs are displayed on the STATUS/EXCEPTION panel. Refer to “IMS STATUS PROFILE Panel” on page 274 for more information about customizing the STATUS/EXCEPTION panel with the IMS STATUS PROFILE panel.

The IMS status can be:

- CTL RGN ABEND (control region abend)
 - DC/MONITOR ACTIVE
 - QUEUES STOPPED
 - NORMAL OPERATION
- The name and status of the first two external subsystems defined to IMS and the number of regions connected to them.

The status can be:

- | | |
|------------------------|---|
| CONNECTED/ n/ n | A connection has been established between IMS and DB2. The first number is the number of connected dependent regions and the second number is the number of dependent regions that are actually signed on to DB2. |
| NOT CONNECTED | The subsystem has been defined to IMS, but no connection exists. |
| CONNECTING | IMS is in the process of establishing a connection with the subsystem. |
| STOPPED | The IMS operator has issued a /STO SUBSYS command. |
| STOPPING | The IMS operator has issued a /STO SUBSYS command and the connection is in the process of stopping. |
| TERMINATING | The subsystem connection is in the process of terminating due to an internal request from IMS or DB2. This could be a normal or abnormal condition as indicated by IMS messages. |
- The number of message processing (MPPS) regions that are active and started (n/ n where n is an MPP count), the number of batch message processing (BMPS) and Fast Path message processing (IFPS) regions that are active, and the number of connected and active DBCTL threads (n/ n where n is a DBT count).

- The number of transactions queued for processing and the number of transactions processed for each region type.
- Graphic information as:
 - PERCENTS
This graph shows total system CPU (TCPU) and control region CPU (ICPU) busy percentages and the largest percent used of the IMS queue data sets SHMSG, LGMSG, or QBLKS (MSGQ).
 - RESPONSE TIME
This graph shows transaction response time for the first three response monitors started if IMS Workload Monitor is installed.

EXCEPTIONS

Use the lower portion of the STATUS/EXCEPTION application to:

- View IMS exception messages
Exception messages indicate a condition in IMS operation that may require operator action. The messages are issued by an EXEC with the IMFEXEC ALERT command. (Refer to the *MAINVIEW AutoOPERATOR Advanced Automation Guide for CLIST EXECs* and the *MAINVIEW AutoOPERATOR Advanced Automation Guide for REXX EXECs* for more information about using EXECs and the IMFEXEC command statements.)
- Clear IMS exception messages
Messages displayed in the EXCEPTIONS area are sent by an EXEC to indicate that an IMS condition needs attention. The message is displayed until the condition is resolved. When the condition is resolved, the warning message can be cleared by the EXEC (ALERT .. DELETE command). The operator cannot delete warning messages from the IMS STATUS/EXCEPTION display. To delete an ALERT, you must use the ALERT DETAIL display of the ALERT Management Facility (see the *MAINVIEW AutoOPERATOR Basic Automation Guide*).
- Sort the display of ALERTs.
You can use the Sort primary command to sort the display of ALERTs by either TIME or QUEUE. If you use SORT TIME, the display will be sorted with the most recently issued ALERT at the top of the display. If you use SORT QUEUE, the display will be sorted by queue with the most recently created queue at the top of the display.
Set the initial sort criteria on the IMS STATUS PROFILE panel in the Initial sort order field. The default is QUEUE.

IMS STATUS PROFILE Panel

You can determine what is displayed on a STATUS/EXCEPTION panel by changing the IMS STATUS PROFILE panel.

To access the profile for the STATUS/EXCEPTION panel, enter PROFILE on the COMMAND line. Figure 71 shows an example of the IMS STATUS PROFILE panel.

| | | | | | |
|---|-----------|--------------------------------|---|---------------------|--|
| BMC Software | | ----- IMS STATUS PROFILE ----- | | AutoOPERATOR | |
| COMMAND ===> | | | | DATE --- 01/03/07 | |
| | | | | TIME --- 09: 25: 27 | |
| USER | ===> * | / | / | / | |
| QUEUE | ===> * | / | / | / | |
| TARGET | ===> IMSC | / | / | / | |
| PRI OR I TY | ===> * | / | / | / | |
| Initial Alert sort order ===> TIME (QUEUE or TIME) | | | | | |
| Press END to SAVE Profile and return to application | | | | | |

Figure 71. IMS STATUS PROFILE Panel

Note: All ALERT categories are set by IMFEXEC ALERT commands in the EXECs that send alerts to the ALERT application within a BBI-SS PAS. See the *MAINVIEW AutoOPERATOR Advanced Automation Guide for CLIST EXECs* and the *MAINVIEW AutoOPERATOR Advanced Automation Guide for REXX EXECs* for more information about the IMXEXEC ALERT command and using EXECs.

Field Description

There are four input fields to design a STATUS/EXCEPTION panel:

- Use USER to display the ALERTs or warnings sent to a particular user ID(s)
- Use QUEUE to display ALERTs or warnings sent to a particular queue(s)
- Use TARGET to display ALERTs or warnings sent to a particular target(s); the TARGET must be local
- Use PRIORITY to display ALERTs or warnings of a particular priority(s)

You can specify four entries for each category.

Note: An * indicates all entities for that category.

Therefore, Figure 71 creates a STATUS/EXCEPTION panel where all the ALERTs or warnings sent to any user ID or any queue with all priorities for target IMSC are shown.

The priorities can be limited, only allowing WARNING messages to be displayed, by changing the PRIORITY entry, as shown in Figure 72.

| | | | | | |
|---|-------------|--------------------------|---|--------------|------------|
| BMC Software ----- | | IMS STATUS PROFILE ----- | | AutoOPERATOR | |
| COMMAND ==> | | | | | |
| | | | | DATE --- | 01/03/07 |
| | | | | TIME --- | 09: 25: 27 |
| USER | ==> * | / | / | / | |
| QUEUE | ==> * | / | / | / | |
| TARGET | ==> IMSC | / | / | / | |
| PRIORITY | ==> WARNING | / | / | / | |
| Press END to SAVE Profile and return to application | | | | | |

Figure 72. IMS STATUS PROFILE Panel — Limiting Priorities

Chapter 19. REGIONS Application

Select the REGIONS application, shown in Figure 73, from the IMS.

| | | | | | | | | | | | |
|--|---------|-----|----------|--------------------------|-------|-----|-----|--------------------|---|------|----------|
| BMC Software ----- | | | | IMS REGIONS ----- | | | | AutoOPERATOR | | | |
| COMMAND ===> | | | | | | | | TGT ===> IMS22X | | | |
| #MPPS>> 2/ 2 #QUEUED>> | | | | 9 DB2B>> NOT CONNECTED | | | | INTVL===> 3 | | | |
| #BMPS>> 1 #QUEUED>> | | | | 0 DB2A>> CONNECTED/ 2/ 2 | | | | STATUS--- INPUT | | | |
| #IFPS>> 0 #QUEUED>> | | | | 0 DB2C>> NOT CONNECTED | | | | DATE----- 01/03/16 | | | |
| LC CMDS: P(STOP), A(ABDUMP), C(CANCEL), PW(STOP WFI) | | | | | | | | TIME----- 15:31:01 | | | |
| LC | JOBNAME | TYP | TRANCODE | PSBNAME | LTERM | CLS | RGN | WKSET | # | SIOS | CPU TIME |
| | I14XMSG | MPP | DSN8PT | DSN8IH13 | | 1 | 1 | 152K | | 284 | 2.24 |
| | I14XMSG | MPP | DSN8CS | DSN8IC13 | | 1 | 2 | 248K | | 283 | 3.12 |
| | I14XBMP | BMP | TDRI VER | PDRI VER | | 4 | 3 | 228K | | 49 | .30 |
| ***** END OF REGIONS ***** | | | | | | | | | | | |

Figure 73. REGIONS Application

REGIONS displays the active IMS regions. New information is displayed each time the display refreshes at a user-specified interval. You can specify either the refresh mode or an input mode as follows:

- Refresh

Enter the screen refresh interval in seconds from 1 to 99 in the INTVL field. The default is the INTERVAL parameter value in the BMC Software-distributed BBPROF data set member BBITSP00.

Start screen refresh by pressing the GO key (PF6 or 18) or by entering GO in the command input line. Screen refresh is indicated by the message, RUNNING, displayed in the STATUS field.

Data cannot be entered until you press ATTN (SNA terminal) or PA1 (non-SNA terminal), which exits refresh and enters input mode. INPUT is displayed in the STATUS field.

- Input

To enter data in the application, it must be in input mode. If the application is in refresh, press ATTN (SNA terminal) or PA1 (non-SNA terminal) for input mode. The message, INPUT, is displayed in the STATUS field.

Commands can be entered in the command line, data can be entered in the TGT or INTVL fields, and the line commands can be used. Press ENTER to display the current IMS status.

The application shows the region status and a scrollable list of the active regions by name. The region status shown in the upper portion of the application displays:

- The number of message processing (MPPS) regions that are active and started (n/ n where n is an MPP count) and the number of batch message processing (BMPS) and Fast Path message processing (IFPS) regions that are active.
- The number of transactions waiting to be processed per region type (# QUEUED >> field).
- The name and status of the first three external subsystems defined to IMS and the number of regions connected to them.

The status can be:

| | |
|------------------------|---|
| CONNECTED/ n/ n | A connection has been established between IMS and DB2. The first number is the number of connected dependent regions and the second number is the number of dependent regions that are actually signed on to DB2. |
| NOT CONNECTED | The subsystem has been defined to IMS, but no connection exists. |
| CONNECTING | IMS is in the process of establishing a connection with the subsystem. |
| STOPPED | The IMS operator has issued a /STO SUBSYS command. |
| STOPPING | The IMS operator has issued a /STO SUBSYS command and the connection is in the process of stopping. |
| TERMINATING | The subsystem connection is in the process of terminating due to an internal request from IMS or DB2. This could be a normal or abnormal condition as indicated by IMS messages. |

- The target IMS in the TGT field.
- The refresh interval in seconds in the INTVL field and the application mode status in the STATUS field (RUNNING for refresh or INPUT for application command entry).

The scrollable list in the lower portion of the REGIONS application shows all the active regions. Use the list to manage a region's status as follows:

| Column | Description |
|----------------|---|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the region you want to change: Line Command MAINVIEW AutoOPERATOR Action |
| P | Issues the /STOP REGION command to terminate the message processing region when the current transaction completes. |
| A | Issues the /STOP REGION P1 ABDUMP P2 to abnormally terminate an application program. |
| C | Issues the /STOP REGION CANCEL to stop a looping region that cannot be stopped by the /STOP REGION P1 ABDUMP P2 command. |
| PW | Issues the /STOP REGION P1 TRAN to stop a message processing program in wait-for-input (WFI) mode. |
| JOBNAME | The 1- to 8-character OS JOBNAME for the region |

| | |
|-----------------|---|
| TYP | The type of region, which can be: |
| MPP | Message processing or Fast Path mixed mode region |
| MDP | Message-driven Fast Path region |
| FPU | Fast Path utility region |
| BMP | Batch message processing region |
| IFP | Fast Path exclusive |
| DBT | DBCTL thread |
| TRANCODE | The transaction in progress. |
| PSBNAME | The scheduled program. |
| LTERM | The logical terminal used for input. |
| CLS | The processing class. |
| RGN | The region ID. |
| WKSET | The real storage in use. |
| # SIOS | The number of real I/Os. |
| CPU Time | The cumulative CPU time for the region. |

Chapter 20. Customizing MAINVIEW AutoOPERATOR for IMS Application Panels

All AutoOPERATOR displays are based on panels stored in the distribution data set BBPLIB. Each panel consists of fixed and variable data.

Caution

You **must** copy any customized or modified panel into UBBPLIB and concatenate it ahead of the BBPLIB panel library.

BBI provides a variety of displayable variables. The linkage between a variable displayed on the screen and one maintained by the BMC Software Dialog Manager is associated with a variable number, such as V12 or V13, in the appropriate field on the panel. The Dialog Manager displays only the selected subset of the variables coded in the body of the panel definition.

You can change MAINVIEW AutoOPERATOR panels to suit your needs. BBPLIB member EAAPPL is an example. EAAPPL defines the STATUS/EXCEPTION application panel. All the status application variables are described as comments in the panel definition. Do the following to change the variables to be displayed:

- Copy EAAPPL to UBBPLIB
- Modify the constant information on the screen that describes each variable, such as the titles or the variable labels.
- Modify the variable number (Vnn where nn is a predefined number listed in a panel library member). The variable number corresponds to the data item to be displayed.

For example, if your site has IMS Workload Monitor (IMS WM), the response-time labels on the STATUS/EXCEPTION application panel (EAAPPL) can be changed to identify your site's application names. The EAAPPL panel shows the first three response monitors started by IMS WM.

For example, if the first three monitors started were:

```
*           Response Time Monitors
REQ=@RSPT,  ADDI +
REQ=@RSPT,  ADDP+
REQ=@RSPT,  DLET+
```

The labels for the response-time plots displayed on the EAAPPL screen could be changed to:

```
           RESPONSE TIME
0. . . . . 2. . . . . 4+
ADDI NV    >>>>
ADDPART    >>>>>>>>
DLETI NV    >>>>>
```

The labels can be any alphanumeric characters. They should be meaningful to your site.

Because the data from only three response monitors is displayed on the EAAPPL panel, the most important monitors should be started first. A group request can be issued with the TARGET=,BLK=,USRID= parameter when IMS starts, as described in the *IMF Online Products System and Use Guide*. This command ensures that the three response monitors are always started in the same sequence. If the startup of the response monitors changes, the labels on the EAAPPL panel need to be edited to identify these first three response monitors.

Chapter 21. Automating and Simplifying IMS Operations

The first step to automating is to identify potential areas for automation. To do this, review your operations procedures manual to find items that are already defined in steps that can be easily programmed into an EXEC. Ask the operators about time-consuming or complicated procedures that could be simplified. Review what happens during emergency situations: how the problem was discovered and what additional information would have been helpful.

AutoOPERATOR provides powerful automation capabilities of the IMS environment with its capture of IMS MTO messages for logging and processing, and its EXEC facility for automating actions. IF-THEN-ELSE logic allows these actions to be tailored to the specific situation.

Within an EXEC, one or more of the following actions can be taken, depending on its purpose.

- Directly modify the system by issuing IMS, MVS or JES commands
- Determine following action by analyzing the response segments received from an IMS command
- Alert operations to an exception requiring action by posting a message to the STATUS/EXCEPTION and ALERT application displays
- Invoke an existing IMS “automated operator” application by submitting an IMS transaction.
- Document current status of the system on the BBI-SS PAS Journal log by issuing IMS or DB2 display commands
- Notify the appropriate person of exceptions that need a response. The EXEC can reword the message and then:
 - Send an alert to the STATUS/EXCEPTION and ALERT application displays
 - Issue an MVS SEND to a local TSO user
 - Issue a WTO to the MVS operator
 - Send a message to an IMS LTERM, the MTO, or an IMS user
 - Send a message to the BBI-SS PAS Journal log with a special search string, such as “SHIFT2”
 - Page the on-call operator through the outboard processor AutoOPERATOR Elan
 - Invoke an EXEC on a remote system to notify someone at a remote location or on another system by any of the above methods

EXECs performing these actions can be invoked in several different ways for different goals:

| | |
|-----------------------|--|
| User-initiated | Simplifies entry of a long and complicated series of commands, reducing errors by minimizing manual input. |
| Time-initiated | Automates the execution of routine tasks to relieve the operator of the task and ensure consistency. |

| | |
|------------------------------|--|
| Externally-initiated | Coordinates the online IMS system with external events, especially related batch jobs. |
| Remote EXEC-initiated | Passes information and requests for action between connected systems. |
| Command-initiated | Monitors the submission of commands to the IMS system. |
| Message-initiated | Automates the response to an IMS event, often signalling an exception condition. |

How MAINVIEW AutoOPERATOR Interacts with IMF Products

MAINVIEW AutoOPERATOR for IMS interacts with all the IMF online products and facilities to automate IMF Performance Management and IMS control. Cross-product interactions provide these tools:

- A graphic display of current IMS transaction response times is included in the STATUS/EXCEPTION application panel if IMS WM is active.
- IMS monitor warning messages of resource or workload exception conditions are written to the BBI-SS PAS Journal log, along with IMS MTO messages, commands, and responses if IMS RM or IMS WM is active.
- Monitor warning messages from IMS RM or IMS WM can initiate EXECs that respond automatically to the detected exception conditions.
- The Interval Services facility, which starts a block of timer-driven requests at BBI-SS PAS startup, can initiate timer-driven requests both for time-initiated EXECs and for performance monitoring (IMS RA, RM, WA, WM).
- MAINVIEW AutoOPERATOR EXECs can issue IMF commands to control performance monitoring by:
 - Starting additional monitors (IMS RM and IMS WM) to gather more information
 - Automatically logging displays to the IMAGE log to document current status of the system (IMS RA, RM, WA, WM)
- To get a complete picture of the status of one or more IMSs, set up a continuous refresh cycle of:

Resource or Workload Analyzer displays
 Resource or Workload Monitor plots
 DMON and DWARN monitor summaries
 IMS AO STATUS/EXCEPTION
 IMS AO REGIONS
 LOG DISPLAY

Suggested Areas for Automation

The following section outlines areas that can be automated to improve IMS operations. Specific scenarios are given that might apply to your site.

Control IMS Resources

IMS availability is no longer measured only by IMS Control Region uptime. Automating control of specific resources can measurably improve availability at both the application and user level.

- **Restart Transactions or Programs after an Abend**

When the IMS message DFS554A is issued, an EXEC can automatically respond to the message by issuing the commands to restart the abending program and transaction. The restart can be controlled according to the type of abend or the number of occurrences. This eliminates the delay caused by manually restarting a program and transaction. Also, the database administrator responsible for the application can be notified. The number of automatic restarts can be controlled by the EXEC.

See the sample EXEC DFS554A in the BBUSER library.

- **Restart Dropped Lines**

An EXEC can respond to the IMS message DFS970I by issuing commands to restart a dropped line, up to a specified number of tries. The network operator can be notified by a WTO at a specific destination (ROUTCDE) if these retries fail.

See the sample EXEC DFS970I in the BBUSER library.

- **Control a Large Group of IMS Resources**

Some IMSs are so large that IMS hangs if a /STOP NODE ALL or similar command is issued. Within an EXEC, use the generic commands so that commands can be issued for groups of resources. Then invoke each EXEC in stages to give IMS time to handle the commands. The staging can be done by the operator, or the first EXEC invoked by the operator could schedule a time-initiated EXEC to handle the staging automatically, or delays can be included between the groups of commands within an EXEC.

- **Control a Group of Related Resources Simultaneously**

All of the resources for an application can be started or stopped at the same time when the operator submits an EXEC at the command line. For example,

```
COMMAND ==> %PAYROLL START
```

starts all of the databases, terminals and transactions for the application program PAYROLL. This not only speeds up the process, but also avoids input errors likely when the operator must key in a long series of commands and resource names.

See the sample EXEC PAYROLL in the BBUSER library.

- **Manage the IMS Test System**

Your test system can be automatically started daily at a specified time, message regions started, databases switched regularly, and users notified prior to shutdown.

See sample EXEC DRIVER in the BBUSER library.

- **Staged IMS Startup**

An EXEC can issue the commands that start the IMS control region, dependent regions, groups of lines and message regions, and assign transactions to classes. Or, the EXEC can issue the transaction classing assignments only.

The sample EXEC DFS994I in the BBUSER library starts up IMS resources in response to the IMS message DFS994I.

- **Reconfigure Resources**

A time-initiated EXEC can be scheduled to handle system reconfiguration for batch-oriented work when the major online workload has finished; for example, at 6 pm. Some of the possible actions are to send a message to all online users, stop most message regions, and then schedule BMPs. An EXEC could be provided to the operators that would allow them to delay these actions for a specified number of minutes in special conditions by setting a global variable that is tested at the beginning of this reconfiguration EXEC.

- **Program Changes in a Virtual Fetch Environment**

An EXEC can automate the steps needed to stop and restart the affected message regions when a program is changed and Virtual Fetch is being used.

- **Fast Path MSDB Recovery**

An EXEC can be scheduled to capture MSDB messages at checkpoint, to start a batch job to copy the MSDBs to MSDBINIT. If an ERE (emergency restart) occurs, the current version of the MSDBs will be automatically loaded.

- **Control ISC Links**

An EXEC can restart a failing link or reassign a link to a backup.

- **Control MSC Links**

An EXEC can restart a failing link or reassign a link to a backup.

- **Simplify DB2 Command Input**

EXECs can also be used to group logically related DB2 databases together, such as all DB2 databases used by IMS transactions. You could then display all the locks for that group of databases by invoking your EXEC:

```
COMMAND ==> %DB2DB LOCK
```

and then viewing the results on the Journal log. The DB2DB EXEC would contain DB2 commands such as:

```
CMD /SSR -DI SPLAY DATABASE DB00001 LOCKS
CMD /SSR -DI SPLAY DATABASE DB00100: DB00120 LOCKS
CMD /SSR -DI SPLAY DATABASE DB035* LOCKS
```

Monitor Exceptions

The monitoring of exception conditions can result in greatly improved availability and service. AutoOPERATOR for IMS can either take a direct action, if possible, or ensure that the appropriate person is notified so that the condition will be corrected as soon as humanly possible.

The following list includes suggestions for specific situations.

- **DFS3258A LAST OLDS IS BEING USED--NEED ARCHIVE**

In addition to sending an alert to the STATUS/EXCEPTION display an EXEC can issue a /DIS OLDS command to capture the status on the Journal log and then allocate an extra Online Log Data Set, if available.

- **DFS0845I xxxxxxxx DATASET LIMIT REACHED, DDNAME=yyyyyyyyy**

An EXEC can respond to IMS message, DFS0845I, by issuing the /BROADCAST or MVS SEND commands to broadcast a warning to the MVS console and the database staff when a database is full.

- **DSNM002I IMS xxxx DISCONNECTED FROM SUBSYSTEM yyy, RC=rc**

When DB2 is down, an EXEC can send an alert to the STATUS/EXCEPTION display with an interpretation of the return code. Or, the DBA for DB2 can be notified if DB2 terminated abnormally.

- **DFS0769I SELECTIVE DISPATCHING - resource**

In response to this message, an alert can be sent to the STATUS/EXCEPTION display. /DIS POOL DCC and /DIS QUEUE commands can be issued to capture the status on the Journal log. IMF plots of the pools, SAPs, and transaction arrival rates can be written to the Image log.

- **RMXXXXW or WMXXXXW -- IMF Monitor Warnings**

These messages are written when a user-specified threshold defining a resource (such as input queue length) or workload (such as response time) exception is exceeded. The text of the message defines the condition, and both the measured value and the threshold are available for analysis. RMXXXXW and WMXXXXW denotes when the threshold is exceeded and RMXXXXI and WMXXXXI denotes when the ALERT no longer exists.

Sometimes direct action will be possible, such as starting another message region. Very often, it would be valuable to have the EXEC log Performance Management displays, such as pools, scheduling, queuing, or program isolation (PI), to the Image log for exception condition analysis. This captures system status at the time of the exception.

Another possibility is to start new monitors to gather more detailed information, which will then be available for online viewing when analyzing the exception. For example, in response to the message AVG RESP TIME BY TRANS (TOTAL), send an alert to the STATUS/EXCEPTION display and start IMF monitors to collect response time by class.

If desired, key exception values, such as response time, can be saved in global variables for use in other EXECs. The RMXXXXI or WMXXXXI message, which indicates that a warning condition no longer exists, can be used to reset the global variable (or delete a warning on the STATUS/EXCEPTION display).

- **IMS Security Violation Message**

In response to a violation, an EXEC can lock that node.

- **RWARN -- Route Alerts to Global Screen**

If operations is monitoring several systems, you may want to set up one global alert screen to show exceptions from all systems. An EXEC can be written to route the alert to a remote system(s) and that remote system can post the alert to a global ALERT screen.

- **Ensure that MSDBs are Loaded at Startup**

You can write an EXEC to ensure that required MSDBs are successfully loaded at startup. The EXEC will issue a /DIS DB command for all required MSDBs. The command responses returned to the Journal will be identified by a format identifier (FID) of D03. An EXEC named D03 can check the status of each MSDB to ensure that it is available as all the response segments are returned within the same EXEC and can be accessed via local variables LINE1 - LINEx. If not, a warning message can be sent to the STATUS/EXCEPTION display or, if necessary, IMS can be brought down immediately with the appropriate /CHE command.

- **DBRC Warning Messages**

To ensure that a DBRC warning message such as DFS485W RECOVERY DATA FOR dbxyz MAY BE MISSING FROM RECON is not overlooked at the console, write an EXEC that sends a message to the STATUS/EXCEPTION display.

You can write another EXEC that verifies periodically that a spare RECON is available. Do this by issuing the DBRC command /RML DBRC=' RECON STATUS' and capturing the response line that is identified with RECON3. Then check this line for the word SPARE.

- **DSNM004I RESOLVE INDOUBT ENTRY(S) ARE OUTSTANDING FOR SUBSYSTEM xxxx**

In response to the DSNM004I message, an EXEC can issue the command,

```
/SSR -DISPLAY THREAD * TYPE INDOUBT
```

to display the INDOUBT entries. The EXEC then submits the jobs IMSINDBT and DB2INDBT. This message:

```
WARNING - IMS and DB2 databases may be out of sync. This condition
occurred at hh.mm.ss on yyddd. Check the output of the display
thread
command on the Journal log for the thread(s) involved. Check the
output of job IMSINDBT for the X'5501FE' records written to the IMS
Log for recovery. Check the output of job DB2INDBT for DB2 indoubt
recovery information written to the DB2 log.
```

can be sent to the Operations Supervisor, the IMS DBA, the DB2 DBA, and the IMS and DB2 systems programmers. It can also be sent to the STATUS/EXCEPTION display, colored in red with an alarm.

Coordinate Online IMS with Batch Processing

AutoOPERATOR for IMS provides unique capabilities for coordinating online IMS with batch jobs. It allows the initiation of batch jobs from EXECs based on IMS status. And, by using the external EXEC scheduling facility, allows batch jobs to initiate IMS actions.

Coordinated Image Copy

Described here is one possible scenario for handling image copy jobs.

- The process can be started by a data center scheduling package such as UCC7, by a time-initiated EXEC, or by a user-initiated EXEC submitted by the operator.
- This EXEC, named IMAGE1, issues the /DBR command and sets global variables, and WAITs for 30 seconds.

```
IMFEXEC CMD /DBR performance data tables
IMFEXEC VDCL performance data tables LIST (dbftime deallok imageok)
IMFEXEC WAIT 30
```

If no deallocation has been indicated, IMAGE1 sends a warning message to the STATUS/EXCEPTION display.

- During the 30-second wait, a message-initiated EXEC named DFS0488I captures the indication of a successful deallocation, updates the deallok flag, and schedules a cross-system EXEC.
- This cross-system EXEC, running on a batch machine, starts the Image copy job, WAITs nn minutes, and, if the job has not completed, sends a warning message to the STATUS/EXCEPTION display.

One of two job steps at the end of the Image copy job will run based on the condition code of the copy step. If zero, the jobstep starts the cross-system EXEC IMAGEOK, and, if not zero, starts the EXEC IMAGEBAD.

The IMAGEOK EXEC (running on the online IMS machine) issues a /START DB command, calculates the elapsed time from “dbftime” (saved in the first EXEC as a global variable) to current time, and sends the message DB /performance data tables WAS UNAVAILABLE FOR nnn MINUTES to the Journal log.

The IMAGEBAD EXEC issues this alert:

ACTION REQUIRED BEFORE RESTORING performance data tables TO ONLINE IMS

Coordinate Batch Job Completion During IMS Downtime

You can coordinate the batch job completion during IMS downtime to ensure that resources are available for the online system startup. For example, the EXEC IMSTERM starts a time-initiated EXEC named BATCH 10 minutes after IMS termination. The BATCH EXEC is invoked every five minutes. It starts jobs, monitors their completions, and keeps track of which databases are ready. If a job does not complete on time, the BATCH EXEC sends a warning to the STATUS/EXCEPTION display.

Automate Performance Monitoring

Some basic performance monitoring can be automated using standard IMS facilities, but many more are available when the other IMF online products are installed. The first three examples here cover the first case, the others assume that one or more of the IMF Performance Management products are installed.

- The EXEC DISA captures IMS status regularly on the Journal log by issuing the commands `/DISPLAY ACTIVE` and `/SSR -DIS THREAD(*)` every 15 minutes. The responses are written to the Journal log.
- An EXEC named @DIS can monitor the use of the `/DISPLAY` (or any other) command. When a `/DISPLAY` command is issued, AutoOPERATOR searches for an EXEC named @DIS. This EXEC can check who is issuing the command and how often. This information can be written periodically to the Journal log.
- An EXEC can automatically start and stop DC Monitor for the required monitoring interval.
- A time-initiated EXEC named MIDNITE can reset logs for the next day. It could:
 - Issue `/CHE` and `/DBR D121PART` to force the OLDS to switch. This provides a cutoff for daily IRUF processing for IMS PR and IMS TA
 - Switch BBI-SS PAS Journal and Image logs
 - Reset IMS RM and IMS WM history buckets to zero.
- A time-initiated EXEC could coordinate monitors with activity. You could:
 - Change active monitors when different regions, classes, or workloads are scheduled at various times of the day.
 - Run a set of special monitors from 11am to 11:30am with automatic logging to create a peak-usage profile.
 - Reset monitors at 6pm when the BMP workload starts.
- You can gather workload and service level data from the Image log and write it to a data set for the performance analyst. This data can include information such as the number of transactions processed and response time, written to the Image log on a timed basis. The batch job can be tailored to select the information needed to solve a specific problem (to be run on request) or to select a standard set of data (to be run on a regular basis). When the job is complete, a message can be sent to the performance analyst stating that the named data set is now ready for review.

Simplify Operations

Many examples of ways to simplify operations have been given in the previous sections. Here are additional examples specific to operations.

- **Automate Archiving of the IMS MTO Log**

Using the BBI-SS PAS Journal log, automate the archiving of a machine-readable IMS MTO log. Daily, a time-initiated EXEC can switch and dump the Journal log at midnight. The dumped copy is then archived on some offline media. This eliminates the need for a hardcopy log.

- **Document a Shift Turnover**

Document a shift turnover with a time-initiated EXEC that issues a message to the BBI-SS PAS Journal, such as:

```
SHI FT2  CHANGE  AT 1600
```

The operator can send additional comments to the Journal by entering messages in the COMMAND field. By including the word SHIFT2 in each message, FIND (and REPEAT FIND) commands can be used by the next shift operator to find all related messages.

- **Application Programmers Control IMS Test System**

Let application programmers use the AutoOPERATOR application line commands, such as starting or stopping databases or transactions, to control the IMS test systems.

- **Control DBR Process**

Ensure that deallocation of DBR'd databases occurs successfully. Capture each /DBR command (using EXEC @DBR) and completion message (using EXEC DFS0488I). If the completion message is not received within the specified time, or the return code is not zero, send a warning to the STATUS/EXCEPTION display.

- **Establish Additional Recovery Points**

Establish additional recovery points when necessary by forcing an OLDS switch with a /DBR command against a dummy database such as the sample database DI21PART.

- **Automate Stopping Regions**

Save message region numbers at region startup (using EXEC DFS5551I) so that the region can be stopped automatically at the proper time. Do this by issuing the /STOP REGION command with the region number (jobname not allowed).

Note: Refer to the OSPI Application in the *MAINVIEW AutoOPERATOR Advanced Automation Guide for CLIST EXECs* or the *MAINVIEW AutoOPERATOR Advanced Automation Guide for REXX EXECs* for alternate methods of stopping regions.

- **More Meaningful Messages**

Change the text of the messages sent to the STATUS/EXCEPTION display so that they will be more meaningful to the operator. For example, if an MSC link goes down, provide the name of the system or location of the link partner, rather than only the internal number.

- **Automate an On-Call List**

Automate the tracking of people who are on call. Set up an EXEC to run at BBI-SS PAS startup and at shift change to set global variables identifying the on-call personnel responsible for that time period.

For example, global variables for the payroll-dba or the IMS-SYSPROG can define the name, TSO ID, work extension and home phone number. All other EXECs then refer to these global identifiers instead of to specific information that continually changes. This single list is easily updated. It can be flexible enough to differentiate between workdays and weekends, holidays, or other special conditions.

Eliminating the IMS Hardcopy Printer

There are two sets of instructions for eliminating the IMS hardcopy printer. Follow the first set of instructions if this will be the first BTAM line defined in your IMS gen. Follow the second set of instructions if you have already defined the first BTAM line in your IMS gen.

- **TO DEFINE THE FIRST BTAM LINE:**

1. In the IMS system generation for the first BTAM line defined, the DD card cannot be a dummy. Add the following lines and then do the appropriate IMS gen.

```
LINEGRP DDNAME=ddname, UNITYPE=PUNCH
LINE ADDR=xxx          (address of a dummy device defined in your
                        I/O gen for your two-track data set)
TERMINAL NAME ltermname (ltermname of your two-track data set)
```

```
LINEGRP DDNAME=ddname, UNITYPE=PUNCH
LINE ADDR=xxx          (address of a dummy device defined in your
                        I/O gen)
TERMINAL NAME ltermname (ltermname of your dummy punch)
```

After the definition of your MTO master terminal, unless already defined in your IMS gen, add:

```
TERMINAL NAME=nodename, PTRSIZE=132, UNIT=3286
NAME (ltermname, SECONDARY)
```

where nodename and ltermname define the secondary master terminal.

2. Add the following to your IMS JCL.

```
//ddname DD DSN=(a two-track data set*), DISP=OLD
          *Define with DCB=(RECFM=UM, LRECL=124, BLKSIZE=134)
//ddname DD DUMMY, DCB=(RECFM=UM, LRECL=124, BLKSIZE=134)
```

3. At IMS startup, issue the IMS command:

```
/START LINE 3 PTERM 1      (Line 1 is always MCO or WTO.
                           Line 2 is the non-dummy DD.)
```

Then assign the LTERM to the dummy device defined in the first step. For example, if the secondary master's ltermname is ALTMAS, then issue:

```
/ASSIGN LTERM ALTMAS LINE 3 PTERM 1
```

Messages to this LTERM will now dequeue as fast as they are queued.

- **IF THIS IS NOT THE FIRST BTAM LINE DEFINED:**

1. In the IMS system generation, add the following and then do the appropriate IMS gen.

```
LINEGRP DDNAME=ddname, UNITYPE=PUNCH
LINE ADDR=x(address of a dummy device defined in your I/O gen)
TERMI NAL NAME ltermname (ltermname of your dummy punch)
```

After the definition of your MTO master terminal, unless already defined in your IMS gen, add:

```
TERMI NAL NAME=nodename, PTRSI ZE=132, UNI T=3286
NAME (ltermname, SECONDARY)
```

where nodename and ltermname define the secondary master terminal.

2. Add the following to your IMS JCL:

```
//ddname DD DUMMY, DCB=(RECFM=UM, LRECL=124, BLKSI ZE=134)
```

3. At IMS startup, issue the IMS command:

```
/START LINE # PTERM 1
```

where # is the line number of the line defined in the first step. For example, if line ADDR=xxx was the fourth line defined in the IMS JCL, then issue:

```
/START LINE 5 PTERM 1 (Line 1 is always MC0 or WT0.)
```

Then assign the LTERM to the dummy device defined in the first step. For example, if the secondary master's ltermname is ALTMAS T, then issue:

```
/ASSI GN LTERM ALTMAS T LINE 5 PTERM 1
```

Messages to this LTERM will now dequeue as fast as they are queued.

Part 4. Using the MAINVIEW AutoOPERATOR for CICS Option

This part contains chapters that describe the applications available with the MAINVIEW AutoOPERATOR for CICS option (also referred to simply as AutoOPERATOR for CICS).

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Chapter 22. Introduction to MAINVIEW AutoOPERATOR for CICS

The MAINVIEW AutoOPERATOR for CICS option (also referred to simply as AutoOPERATOR for CICS) provides the following options:

- An online CICS SYSTEM STATUS application that provides
 - A series of Hyperlinks to MAINVIEW for CICS displays
 - An ALERTs display for CICS operational exceptions messages
- The ability to create user-written automation procedures, called EXECs, in either REXX or CLIST languages. These EXECs can perform routine Master Console tasks and issue CICS CEMT service transactions or MAINVIEW AutoOPERATOR commands to streamline your CICS operational environment.
- Input to the Rule Processor from CICS Transient Data Queue (TDQ) messages.
- An online CICS BROADCAST application that allows you to selectively send messages to a list of terminals.

As an operator, you can use the MAINVIEW AutoOPERATOR ALERT and SYSTEM STATUS applications to better manage CICS operations.

MAINVIEW AutoOPERATOR for CICS Applications Overview

Access to MAINVIEW AutoOPERATOR for CICS applications are summarized by looking at options 1 and 2 on the CICS OPERATOR WORKSTATION menu:

| | | | |
|--|-----------|--------------|-------------------------------------|
| BMC Software ----- CICS OPERATOR WORKSTATION ----- | | AutoOPERATOR | |
| OPTION | ====> | DATE | -- 01/01/24 |
| | | TIME | -- 10: 29: 42 |
| | | USERID | -- DDH1X |
| | | MODE | -- ISPF 4. 1 |
| 1 | STATUS | - | Status of CICS System(s) |
| 2 | BROADCAST | - | Send a Message to CICS Terminal (s) |
| 3 | DATABASE | - | Display/Modify DBCTL DATABASE |
| 4 | PROGRAM | - | Display/Modify DBCTL PROGRAM |
| 5 | REGIONS | - | Display/Modify DBCTL REGION |
| X | EXIT | - | Terminate |
| | | PF1/13: | HELP |
| | | PF3/15: | EXIT |

Figure 74. CICS OPERATOR WORKSTATION Panel

You can control CICS operations by using the following options:

| | | | |
|---|-----------|---|-------------------------------------|
| 1 | STATUS | - | Status of CICS System(s) |
| 2 | BROADCAST | - | Send a Message to CICS Terminal (s) |
| . | | | |
| . | | | |
| . | | | |

The MAINVIEW AutoOPERATOR for CICS option also provides support for MV MANAGER for DBCTL as a target address space with the following applications:

```
.  
.   
.   
3 DATABASE      - Display/Modify DBCTL DATABASE  
4 PROGRAM       - Display/Modify DBCTL PROGRAM  
5 REGIONS       - Display/Modify DBCTL REGION  
.   
.   
.
```

The following sections briefly describe all these applications.

SYSTEM STATUS Application

Use this application to monitor CICS operational exceptions and to launch MAINVIEW for CICS applications to view detailed information about a particular CICS resource. To switch between CICS targets on any CPU, change the target name in the TGT field in the upper right corner of the CICS SYSTEM STATUS display.

BROADCAST Application

Use the CICS BROADCAST panel to send a 1- to 6-line message to one or more CICS terminals connected to your target CICS system. CICS terminals in use are displayed on the same panel, so you can quickly select the terminals to receive messages, using flexible sort criteria. These messages are sent asynchronously and are unobtrusive to the receiving terminal.

DATABASE Application

Use the DATABASE option to display a menu from which you can select three applications:

- The DL/I Databases application shows a scrollable list by database name, organization, type, local number, and status.
- The Data Entry Databases application shows a scrollable list of the DEDBs by name, the number of areas defined for each DEDB, and current status.
- The DEDB Areas application shows a scrollable list of the DEDB areas by name, the DEDB name, the number of area data sets (ADS), the percentage of sequential dependent and independent overflow used, any active utility, and the current status of the area.

PROGRAM Application

Use the PROGRAM application to see a scrollable list of the DBCTL application programs. It displays:

- The name of each program and its type (message processing, batch message processing, or Fast Path)
- Current status

REGIONS Application

Use the REGIONS application to see the number of active and scheduled message processing, batch message processing, and Fast Path regions and the number of transactions queued per region, and a scrollable list of regions.

Integrating the CICS Option with Other Products

If you have other MAINVIEW AutoOPERATOR options or MAINVIEW performance products (such as CICS MANAGER, MAINVIEW for DB2, or MAINVIEW for IMS Online) installed, the CICS Option can issue commands through them. EXECs can communicate with these products and variables are shared across components. Therefore, you can solve performance and automation problems when MVS and DB2 resources affect CICS.

MAINVIEW AutoOPERATOR EXECs for CICS

MAINVIEW AutoOPERATOR CLIST or REXX EXECs can be written to automate a wide range of CICS applications and systems. MAINVIEW AutoOPERATOR for CICS allows you to write EXECs that:

- Invoke CEMT in a CICS region
- Start CICS transactions
- Issue MAINVIEW AutoOPERATOR for CICS (IMFEXEC CICS) commands that can display and manipulate CICS resources.

Note: Refer to the *MAINVIEW AutoOPERATOR Advanced Automation Guide for CLIST EXECs* or the *MAINVIEW AutoOPERATOR Advanced Automation Guide for REXX EXECs* for a complete list of IMFEXEC CICS commands.

In conjunction with, or as an alternative to, writing custom solutions with MAINVIEW AutoOPERATOR for CICS, the BMC Software MAINVIEW Solutions product contains several CICS-specific solutions. Refer to the *MAINVIEW AutoOPERATOR Solutions Guide* for additional information.

Chapter 23. Describing the CICS System Status Panel

The CICS System Status panel has three areas. The first area, called the Control Area, is explained in Chapter 2, “Describing Common Application Functions and Display Fields” in the *MAINVIEW AutoOPERATOR Basic Automation Guide*.

The second area (Area-2) is described in the section, “Hyperlinks to MAINVIEW for CICS: Area-2” on page 301. The third area (Area-3) is described in the section, “ALERT Display: Area-3” on page 303.

Using Primary Commands

The following primary commands can be typed on the COMMAND line of the CICS System Status application.

| Command | Resulting Action |
|----------------|--|
| EXPAND | This command invokes other applications when you press ENTER, based on the position of the cursor. It functions as if you press ENTER with the command line blank. It exists for compatibility purposes only. |
| GO | Invokes screen refresh mode. |
| PROFILE | Displays the CICS System Status Profile panel. |
| SORT | Sorts the ALERTs in the ALERTs Display. The SORT TIME command sorts the ALERTs with the most recently issued ALERT at the top of the display. The SORT QUEUE command sorts the ALERTs by queue with the most recently created queue at the top of the display. To change the sort criteria, use the Initial sort sequence field on the CICS System Status panel or the CICS System Status Profile panel. |

Hyperlinks to MAINVIEW for CICS: Area-2

As shown in Figure 75, the center of the panel contains resource names that describe the type of hyperlink that each field represents. By moving the cursor to an individual field and pressing ENTER, you can invoke the corresponding MAINVIEW for CICS application.

| | | | |
|---------------------------------|-----------------------|-------------------|---------------------------|
| ⋮ | | | |
| Hyperlinks to MainView for CICS | | | |
| ----- TASKS ----- | ----- TERMINALS ----- | ----- FILES ----- | ----- STORAGE USAGE ----- |
| Current Tasks | Signed on now | Opened | DSA Storage |
| Total Tasks | Processing | Closed | Subpool s |
| Abends | Out of service | Di sabl ed | MVS Regi on |
| Times at MAXT | Acqui red | Enabl ed | ⋮ |

Figure 75. CICS System Status Panel: Area-2

To hyperlink to MAINVIEW for CICS, place the cursor on any field in this area and press ENTER. The following table lists the field names, MAINVIEW for CICS application that is invoked, and a description of data displayed on the screen.

| Field Name | MAINVIEW for CICS Application | Description of Output |
|----------------|-------------------------------|---|
| Current Tasks | Task Display | Information related to currently running tasks. |
| Total Tasks | Summary Display | Current and trend performance indicators and summary of resource usage. |
| Abends | Abend Display | Information regarding recent abends and dumps taken. |
| Times at MAXT | Tclass Display | Transaction classes and related statistics. |
| Signed on now | Terminal Display | Number of terminals that are currently signed on. |
| Processing | Terminal Display | Terminals currently in use. |
| Out of service | Terminal Display | Terminals out of service. |
| Acquired | Terminal Display | Number of terminals acquired through VTAM by this CICS region. |
| Opened | File Display | Open files. |
| Closed | File Display | Closed files. |
| Disabled | File Display | Disabled files. |
| Enabled | File Display | Enabled files. |
| DSA Storage | DSAS Display | Definition and status of dynamic storage areas in CICS. |
| Subpools | Subpool Display | CICS storage subpool usage statistics. |
| MVS Region | Regions Display | Current storage usage in the CICS address space. |

Refer to the section, “ALERT Display: Area-3” on page 303 for information about the third area of the CICS SYstem Status panel.

ALERT Display: Area-3

As shown in Figure 76, the ALERT display area contains a scrollable list of ALERT messages for the target CICS system.

```

BMC Software ----- CICS System Status ----- AutoOPERATOR
COMMAND ==> TGT ==> CICSPROD
Interval ==> 3 Date --- 01/03/17
Status --- INPUT Time --- 17:00:21

Hyperlinks to MainView for CICS
----- Tasks ----- Terminals ----- Files ----- STORAGE USAGE ---
Current Tasks Signed on now Opened DSA Storage
Total Tasks Processing Closed Subpool s
Abends Out of service Disabled MVS Region
Times at MAXT Acqui red Enabled

Sorted by ==> TIME Current Alerts: 7
TIME ORIGIN ----- ALERT MESSAGES -----
16:53 CICSTEST DFHAC2236 03/17/01 10:26:57 AAOCT12J
TRANSACTION PING ABEND ASRA IN PROGRAM PINGPARM
TERM K775. UPDATES TO LOCAL RECOVERABLE RESOURCES
WILL BE BACKED OUT
16:53 CICSTEST FT439 REQUEST DID NOT COMPLETE - REASON CODE 4607
16:52 CICSPROD DFHAC2236 03/17/01 10:26:57 AAOCT12J
TRANSACTION HK00 ABEND ASRA IN PROGRAM HK00INIT
TERM T072. UPDATES TO LOCAL RECOVERABLE RESOURCES
WILL BE BACKED OUT
16:52 CICSPROD FT430E UNABLE TO CONNECT WITH BBI-SS JB51 AT THIS TIME
16:51 CICSPROD FT439 REQUEST DID NOT COMPLETE - REASON CODE 4607
16:51 CICSTEST FT094S TRAN LMNG EXCEEDED SERVICE LEVEL
3.503 IS AVG RESPONSE
16:51 CICSTEST FT430E UNABLE TO CONNECT WITH BBI-SS JB51 AT THIS TIME
***** END OF ALERTS *****

```

Figure 76. CICS System Status Panel with ALERTs Displayed

To see more information about a particular ALERT, position the cursor anywhere on an ALERT and press ENTER. This action invokes the AutoOPERATOR ALERT Detail application. When the Alert Detail application screen is displayed, by default, only alerts from the same queue as the selected alert are displayed. You can alter this default configuration after the screen is initially displayed.

ALERT Display Fields

There are two fields in the ALERT display area of the CICS System Status panel.

| Field Name | Description |
|----------------|---|
| TIME | The time that the ALERT was issued. |
| ALERT MESSAGES | The text of ALERT messages. The first 68 characters of the message are displayed. |

System Status Profile Panel

Use the CICS System Status Profile panel to indicate which ALERTs (based on queues and priorities) are displayed in Area-3 of the CICS System Status panel and how they are initially sorted.

You can define individual profiles for up to 23 CICS targets, and you can also define a default profile layout. To change a particular profile for a CICS system:

1. Change the current TGT system name by typing the new target name in the TGT field.
2. Enter the PROFILE primary command.
3. Press ENTER.

The current profile for the named system is displayed and can be changed. If no profile for the named system exists, the CICS Status Profile Targets panel is displayed. You can choose a profile slot. This slot is filled in with default values, which you can alter subsequently. If all of the slots are already filled, you can make space in the profile for a new target by deleting an old target system profile. It is not possible to delete the default profile specification.

Following is an example of the CICS System Status Profile panel.

| | | | | |
|---|------------------------------|----------------------------|----------|--------------|
| BMC Software | ----- | CICS System Status Profile | ----- | AutoOPERATOR |
| COMMAND ===> | | | TGT ===> | CICSPROD |
| Queue, Priority and Sort specifications for the current CICS | | | | |
| Queues | ===> * | / * | / * | / * |
| Priorities | ===> * | / * | / * | / * |
| Initial sort sequence | ===> QUEUE (QUEUE or TIME) | | | |
| Enter CANCEL to cancel, END to save, TARGETS to invoke target profiling | | | | |

Figure 77. CICS System Status Profile Panel (PROFILE)

You can use the CICS System Status Profile panel to display the ALERT for a specific queue (up to four queues) and to select the priority levels of the ALERT displayed.

CICS TARGET PROFILE SELECTION Panel

The following panel is displayed when you enter the TARGETS primary command on the CICS System Status Profile panel. This panel lists up to 23 target system names plus one default specification.

| | | | | | |
|---|----------|--------------------------------|----------|-------------------|----------|
| BMC Software ----- | | TARGET PROFILE SELECTION ----- | | AutoOPERATOR | |
| COMMAND ==> | | | | TGT ==> CICS | |
| | | | | DATE --- 01/03/01 | |
| Status Profiles are defined for these Target Systems. | | | | TIME --- 17:06:31 | |
| LINE COMMANDS: (S)elect, (D)ele | | | | | |
| LC | TARGET | LC | TARGET | LC | TARGET |
| -- | CICSAOR | --- | - OPEN - | --- | - OPEN - |
| -- | CICSTOR | --- | - OPEN - | --- | - OPEN - |
| -- | CICSPROD | --- | - OPEN - | --- | - OPEN - |
| -- | CICSTEST | --- | - OPEN - | --- | - OPEN - |
| -- | CICSBASE | --- | - OPEN - | --- | - OPEN - |
| -- | - OPEN - | --- | - OPEN - | --- | - OPEN - |
| -- | - OPEN - | --- | - OPEN - | --- | - OPEN - |
| -- | - OPEN - | --- | - OPEN - | --- | DEFAULT |

Figure 78. CICS Target Profile Selection Panel

This panel has two areas. The first area, the Control Area, is explained in the *MAINVIEW AutoOPERATOR Basic Automation Guide*. Enter the END primary command on the COMMAND line to return to the CICS System Status Profile panel.

The second area of the panel contains a list of the target system names with defined profiles. You can define 23 targets. Unused slots read - OPEN -.

Line Commands for CICS TARGET PROFILE SELECTION Panel

Use the following line commands in the LC column of this panel.

Table 5. Line Commands for CICS Target Profile Selection Panel

| Command | Description |
|----------|--|
| S | Selects this open slot for use by the CICS target name shown in the TARGET fields. The open slot will be replaced by a slot bearing the current system name. |
| D | Makes the indicated system profile slot available for use by deleting its current contents. |

Chapter 24. BROADCAST Application

When you select Option 2 from the Operator Workstation menu, the CICS BROADCAST panel is displayed, as shown in Figure 79. Use this panel to send a 1- to 6-line message to CICS terminals connected to the CICS system named in the TGT field. Only VTAM terminals which are acquired and non-VTAM terminals marked as in-service will receive these messages.

The BROADCAST application requires that receiving terminals have full Basic Mapping Support (BMS) because the application uses the ROUTE command to send messages to terminals.

This method of routing messages does not interrupt the work at the terminal unless the terminal is involved in a pseudo-conversational transaction where the operator enters data on the panel but has not pressed ENTER prior to the routing of the message. In this case, the data would be lost. Depending on the work in progress or the state of an idle terminal, the message might not be received for a considerable time.

| | | | | | | | | | |
|--|------|----------------------|----------|-------------------|---------|------------------|------|---------|--|
| BMC Software ----- | | CICS BROADCAST ----- | | AutoOPERATOR | | | | | |
| COMMAND ==> | | | | TGT ==> CICS | | | | | |
| | | | | DATE --- 01/03/01 | | | | | |
| | | | | TIME --- 12:39:22 | | | | | |
| ENTER MESSAGE TEXT: | | | | | | | | | |
| ==> Please note: | | | | | | | | | |
| ==> CICS will shut down in 10 minutes. | | | | | | | | | |
| ==> Please sign off. | | | | | | | | | |
| ==> | | | | | | | | | |
| ==> | | | | | | | | | |
| ==> | | | | | | | | | |
| (S)elect terminal(s) from list below and enter SEND to broadcast the message | | | | | | | | | |
| Sort criterion ==> TERMID | | | | | | | | | |
| LC | TERM | VTAM | LOGON | TRAN | TYPE/ | ACC. | VTAM | MESSAGE | |
| | ID | NODENAME | ID | ID | MODEL | MTHD | STAT | STATUS | |
| --- | L352 | TCPBL352 | | CEMT | R3277-2 | | VTAM | AUTO | |
| --- | BN23 | BR02LU23 | RACFUSER | CEDA | R3277-2 | | VTAM | ACQ | |
| --- | BA06 | BR02LU06 | | CEMT | L3277-2 | | VTAM | AUTO | |
| --- | BA31 | BL01LU31 | | XSPE | R3277-2 | | VTAM | ACQ | |
| --- | BA32 | BL01LU31 | | | R3277-2 | | VTAM | REL | |
| --- | CRO4 | CD04LU04 | | CEMT | R3277-2 | | VTAM | ACQ | |
| --- | CNS0 | | | | CONSOLE | | CICS | | |
| --- | CNS1 | | | | CONSOLE | | CICS | | |
| --- | CNS2 | | | | CONSOLE | | CICS | | |
| --- | CBN3 | | | | CONSOLE | | CICS | | |
| ***** | | | | | | END OF TERMINALS | | ***** | |

Figure 79. CICS BROADCAST Panel

The CICS BROADCAST panel has three areas. The first area, the Control Area, is explained in the *MAINVIEW AutoOPERATOR Basic Automation Guide*. See “Primary Commands” on page 310 for a description of primary commands you can enter in the COMMAND field.

In the middle area of the panel are six lines you can use to enter the text of the message you want to send. You can send the message lines to another CICS by changing the TGT field. By selecting a new target region and list of terminals, you can send the same message without re-entering the text.

The bottom area of the panel is a scrollable list of terminals on the target CICS system that are eligible for BROADCAST messages. Specific data about each terminal is displayed to help

you select terminals to receive the message. See “Line Commands” on page 311 for a description of line commands you can enter in the LC column.

Using the BROADCAST Application

Use the S line command to iteratively select and route messages to terminals. When a terminal is selected, the MESSAGE column reads MARKED and the line is displayed in reverse video (or it is highlighted). After you issue the SEND primary command, the message is routed to the selected terminals. The MESSAGE column reads ROUTED for those terminals.

Alternatively, you can use the SELECT primary command to select a list of terminals, using generic specifications. The panel is redisplayed with a short message indicating the number of terminals selected by the command, and the terminal list is positioned at the first TERM ID selected.

Note: Any criteria following the SELECT command refers to the column in the Sort Criteria field (Term-ID or VTAM nodename).

To send the message to the selected terminals, enter SEND in the COMMAND field and press ENTER. Use the scroll keys to examine the list of selected terminals.

When you press ENTER, the panel is redisplayed and ROUTED is displayed in the MESSAGE column. You can use SELECT iteratively to select and route messages to terminals. To clear the messages from the terminal display, exit and re-enter the BROADCAST panel, or use the EOF key to erase the lines.

The fields on this panel are:

| Field Name | Description |
|------------|-------------|
|------------|-------------|

| | |
|----------------|--|
| TERM ID | |
|----------------|--|

| | |
|--|---|
| | The 1- to 4-character CICS terminal ID for this terminal. |
|--|---|

| | |
|----------------------|--|
| VTAM NODENAME | |
|----------------------|--|

| | |
|--|---|
| | The 1- to 8-character VTAM node name for this terminal. This field is blank if this is not a VTAM terminal. |
|--|---|

| | |
|-----------------|--|
| LOGON ID | |
|-----------------|--|

| | |
|--|---|
| | The 1- to 8-character logon ID for the user currently signed on to this terminal. This field is blank if an external security manager is not being used with the CICS region. |
|--|---|

TRAN ID

The 1- to 4-character transaction ID currently running on this terminal. This field is blank if no transaction is currently executing at this terminal.

TYPE/MODEL

The 1- to 8-character hardware terminal type and model.

ACC. MTHD

The access method (for example, VTAM or BTAM) used for this terminal.

VTAM STAT

The current VTAM status (for example, ACQUIRED, RELEASED) of this terminal.

MESSAGE STATUS

Contains ROUTED for any terminals that have had the message text routed to them. Otherwise it is blank.

Terminals Eligible for Broadcast Messages

Not all terminals defined to CICS are good candidates for broadcast type messages. Generally, only interactive user terminals should receive messages. Many intelligent workstations and financial system controllers do not support the reception of broadcast messages.

It is not possible to route messages to certain terminal types, such as RJE stations, dedicated printers, and so on. When a broadcast message is undeliverable, an error message is asynchronously written to the CICS log by the CICS transaction. The message contains status and exception codes that indicate why the message could not be delivered.

The format of this message is:

FT801I (Date) (Time) Unable to route message to (Term), RC=X'xx'.

The contents of the route return code matches the return code provided by the CICS BMS Route service. You can analyze it to determine the nature of the problem.

You can use the sample macro CAOTTAB to limit the number of terminals eligible for the Broadcast function. For information on CAOTTAB, refer to the MAINVIEW AutoOPERATOR Customization Guide.

CICS Message Display

When a message is sent using the BROADCAST application, it is displayed on the CICS terminal as shown in the following figure. The CICS terminal screen is cleared before the message is displayed. The message is displayed immediately if no transaction is currently attached to the terminal. If there is a transaction attached to the terminal, the message is displayed at the completion of the current transaction.

```
WARNING: CICS WILL SHUT DOWN AT 18:00
          PLANNED RESTART AT 20:00
WARNING: CICS WILL SHUT DOWN AT 18:00
          PLANNED RESTART AT 20:00
WARNING: CICS WILL SHUT DOWN AT 18:00
          PLANNED RESTART AT 20:00
MSG FROM OPERATOR: CMREDUS ON 02-FEB-91 AT 13:35 - PRESS ENTER TO CONTINUE
```

Primary Commands

You can enter the primary commands listed in the following list in the COMMAND field of the CICS BROADCAST panel.

| Command | Description |
|---|---|
| CANCEL | Deselects any terminals previously selected so that the message is not sent. Exits the application. |
| DESELECT [termid,termid] | Deselects the selected terminals. Does not exit the application. |
| LOCATE | Positions the scrollable terminal list display at the first TERM ID that matches the string entered for LOCID. For example, L T positions the display at the first terminal that begins with T. If no TERM ID is found that matches the string, the display is positioned at the next higher value. |
| RESET | Refreshes the terminal list display. |
| SELECT [TERM ID,TERM ID2,...TERM ID6] [TERM*1, TERM*2,...TERM*6] | Selects one or more terminals (up to six terminals) to receive the message. You can use a single TERM ID, a list of TERM IDs, or a generic specification using an asterisk (*) or a plus sign (+). |
| SEND | Routes the message to the selected terminals. |

Note: The above terminal identifiers correspond to CICS terminals if the sort criteria contains TERMID. The identifiers correspond to VTAM nodenames if the sort criteria contains NODENAME.

Line Commands

You can enter the following line commands in the column labeled LC.

| Command | Description |
|----------|---|
| S | Select this terminal for message broadcast. |
| D | Deselect this terminal for message broadcast. |

Chapter 25. DATABASE Applications

Select the DBCTL DATABASE option, shown in Figure 82, from the CICS OPERATOR WORKSTATION panel.

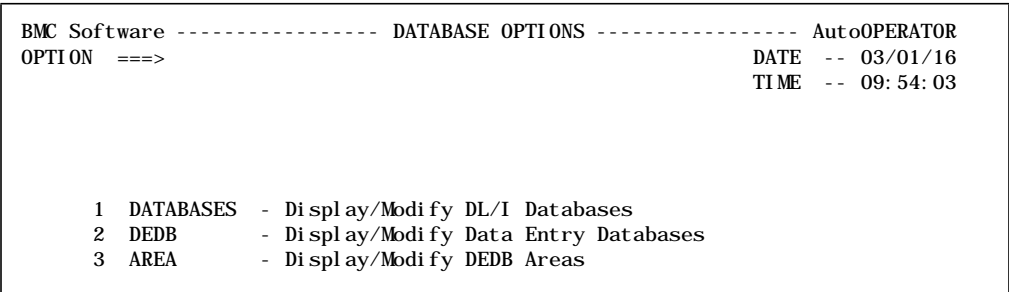


Figure 80. DBCTL DATABASE Options Menu

The DATABASE option comprises a menu and set of applications. Use the menu to select an application to manage:

- All the databases defined to a IMS region.
- Fast Path data entry databases (DEDB)
- Fast Path DEDB areas and area data sets

Managing All the Databases

Select the DL/I application, shown in Figure 81, from the DATABASE OPTIONS menu.

| | | | | | | | | | | | |
|--|----------|--------------|-----------|----------------|------|-------|--------------------------|----------------|--|--|--|
| BMC Software ----- | | | | DATABASE ----- | | | | AutoOPERATOR | | | |
| COMMAND ==> | | | | | | | | TGT ==> IMS410 | | | |
| LC CMDS ==> P, S, DR, DD, DF, DV, L, U | | | | | | | | | | | |
| LC | DATABASE | DATASET | ORG | TYPE | LNUM | ----- | STATUS | ----- | | | |
| | BE1PARTS | DMB | NOT AVAIL | DL/I | 1 | | STARTED | | | | |
| | BE2ORDER | DMB | NOT AVAIL | DL/I | 2 | | STARTED | | | | |
| | BE2ORDRX | DMB | NOT AVAIL | DL/I | 3 | | STARTED | | | | |
| | BE2PARTS | DMB | NOT AVAIL | DL/I | 4 | | STARTED | | | | |
| | BE2PCUST | DMB | NOT AVAIL | DL/I | 5 | | STARTED | | | | |
| | BE3ORDER | DMB | NOT AVAIL | DL/I | 6 | | STARTED | | | | |
| | BE3ORDRX | DMB | NOT AVAIL | DL/I | 7 | | STARTED | | | | |
| | BE3PARTS | DMB | NOT AVAIL | DL/I | 8 | | STARTED | | | | |
| | BE3PSID1 | DMB | NOT AVAIL | DL/I | 9 | | STARTED | | | | |
| | BOOINP01 | DMB | NOT AVAIL | DL/I | 10 | | DATABASE LOCKED | | | | |
| | BOOOUT01 | DMB | NOT AVAIL | DL/I | 11 | | DATABASE NOT INITIALIZED | | | | |
| | CUSTHDAM | DMB | NOT AVAIL | DL/I | 12 | | STARTED | | | | |
| | CUSTHIDM | DMB | NOT AVAIL | DL/I | 13 | | STARTED | | | | |
| | CUSTHISM | I SAM CASE 1 | | DL/I | 14 | | DATABASE LOCKED | | | | |
| | CUSTINDX | DMB | NOT AVAIL | DL/I | 15 | | STARTED | | | | |
| | CUSTVSAM | DMB | NOT AVAIL | DL/I | 16 | | STARTED | | | | |
| | DBFSAMD1 | FAST PATH | | MSDB | 17 | | DATABASE STOPPED | | | | |
| | DBFSAMD2 | FAST PATH | | MSDB | 18 | | DATABASE IN ERROR | | | | |
| | DBFSAMD3 | FAST PATH | | DEDB | 19 | | DATABASE NOT INITIALIZED | | | | |
| | DBFSAMD4 | DMB | NOT AVAIL | DL/I | 20 | | STARTED | | | | |

Figure 81. DL/I DATABASE Application for DBCTL

This application shows a scrollable list of all the databases by name for both DL/I and Fast Path. The list identifies the data set organization, the database type, the database number, and the status of each database. Use the DL/I application to control all the databases¹ defined for your IMS, as follows:

| Column | Description |
|--|--|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the database you want to change: |
| Line Command MAINVIEW AutoOPERATOR Action | |
| P | Issues the /STOP DATABASE command to stop the database |
| S | Issues the /START DATABASE command to start the database |
| DR | Issues the /DBRECOVERY DATABASE command with NOFEOV to stop the scheduling of transactions that update or read the database. The IMS log does not switch to the next OLDS (online log data set). |
| Note: This line command cannot be used for an MSDB. | |

¹ Although Fast Path databases are shown in this application, the applications designed specifically for MSDBs and DEDBs display data that is more meaningful for those databases.

| | |
|-----------|--|
| DD | Issues the /DBDUMP DATABASE command with NOFEOV to stop the scheduling of transactions or programs that update the specified database. Transactions reading that database continue. The IMS log does not switch to the next OLDS. Note: This line command cannot be used for a DEDB or MSDB. |
| DF | Issues the /DBRECOVERY DATABASE without NOFEOV to stop the scheduling of transactions that update or read the database. The IMS log switches to the next OLDS (online log data set). Note: This line command cannot be used for an MSDB. |
| DV | Issues the /DBDUMP DATABASE without NOFEOV. The command executes the same as /DBDUMP with NOFEOV except the IMS log switches to the next OLDS. Note: This line command cannot be used for a DEDB or MSDB. |
| L | Issues the /LOCK DATABASE command to stop the scheduling of application programs that use the database. |
| U | Issues the /UNLOCK DATABASE command to free a database previously locked by the /LOCK command. |

DATABASE 1- to 8-character name of the database.

DATASET ORG

The IMS data set organization, which can be:

DMB NOT AVAIL

The Data Management Block (DMB) control block cannot be located. The DMB pool may be too small for the DMB or the database has not been opened yet.

ISAM CASE 1

HISAM database (one data set group).

ISAM CASE 2

HISAM database (multiple data set groups).

SSAM

Single segment sequential database

HSAM

Multiple segment sequential database

HD DIRECT

HDAM database (OSAM data set)

HD INDEXED

Data portion of HIDAM database (OSAM data sets)

INDEX DATABASE

Primary index to HIDAM database (ISAM data sets). Or, secondary index to HISAM, HIDAM, or HDAM database (ISAM data sets).

HISAM VSAM

HISAM database (one data set group of VSAM data sets).

SHISAM VSAM

Single segment HISAM database (VSAM data sets).

VSAM INDEX-K

Primary index to HIDAM database (VSAM Keyed Sequential Data Sets (K SDS)). Or, secondary index to HISAM, HIDAM, or HDAM database (VSAM KSDS).

VSAM HDAM

HDAM database (VSAM Entry Sequential Data Sets (ESDS)).

VSAM HIDAM

Data portion of HIDAM database (VSAM ESDS).

VSAM INDEX-K/E

Secondary index to HISAM, HIDAM, or HDAM database (VSAM KSDS and ESDS (nonunique keys)).

FAST PATH

Fast Path database

TYPE The IMS database type, which can be:

DL/I DL/I database

MSDB Fast Path main storage database

DEDB Fast Path data entry database

LNUM The local Data Management Block (DMB) number from the IMS database directory.

STATUS The current database status, which can be:

ALLOCATION FAILURE

Dynamic allocation for the database was unsuccessful.

NOT OPEN

The database is not open.

STOPPED

The /STOP DATABASE command was issued for the database.

OPENED

The database is open.

NOT INITIALIZED

No DBD was found for the database during IMS initialization.

LOCKED

The /LOCK DATABASE command was issued for the database.

DATABASE IN ERROR

The database had a write error.

/DBD IN PROGRESS

The /DBDUMP DATABASE without NOFEOV was issued for the database.

/DBR IN PROGRESS

The /DBRECOVERY DATABASE with NOFEOV was issued for the database.

INQUIRY ONLY

Updates to the database are not allowed. The scheduling of any transactions or programs updating the database has been stopped.

Note: When INQUIRY ONLY and NOT OPEN are both true, INQ ONLY is shown.

Exceptions off (X OFF) is the default. All databases are displayed with a status, including those that are an exception to normal operation. If X ON for exceptions on is entered in the COMMAND line as described in Chapter , “Resource Exception Command” on page 229, only databases in an exception to normal operation are displayed. The exception status can be:

DATABASE STOPPED
DATABASE LOCKED
DATABASE IN ERROR

Managing Fast Path Data Entry Databases (DEDB)

Select the DEDB application (shown in Figure 82) from the DATABASE options menu.

| | | | | | | | |
|--------------|-----------|--|--------|---------|---------|--------------------|--|
| BMC Software | | ----- DATA ENTRY DATABASES ----- | | | | AutoOPERATOR | |
| COMMAND ==> | | | | | | TGT ==> IMS410 | |
| LC CMDS ==> | | P(STOP), S(START), DR(RECOVER NOFE0V), DF(RECOVER FE0V), L(LOCK) | | | | | |
| | | U(UNLOCK), D(SHOW AREAS) | | | | | |
| | | ----- AREAS ----- | | | | ----- STATUS ----- | |
| LC | DATABASE | TOTAL | ACTIVE | STOPPED | NOTOPEN | | |
| | BBFDDDB01 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB02 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB03 | 11 | 8 | 2 | 1 | | |
| | BBFDDDB04 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB05 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB06 | 11 | 0 | 0 | 11 | LOCKED | |
| | BBFDDDB07 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB08 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB09 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB10 | 11 | 0 | 0 | 11 | NOT INIT | |
| | BBFDDDB11 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB12 | 11 | 6 | 1 | 4 | | |
| | BBFDDDB13 | 11 | 0 | 0 | 11 | STOPPED | |
| | BBFDDDB14 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB15 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | BBFDDDB16 | 11 | 0 | 0 | 11 | NOT OPEN | |
| | DBFSAMD3 | 1 | 1 | 0 | 0 | | |
| | | ***** END OF DEDBS ***** | | | | | |

Figure 82. Fast Path DEDB Application

This application shows a scrollable list of the data entry databases defined for IMS by name. For each DEDB, the list identifies the total number of areas and the number of areas that are active, stopped, and not open and the current status of the DEDB. Use the application to control the DEDBs as follows:

| Column | Description |
|---|---|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the DEDB database you want to change: |
| Line Command MAINVIEW AutoOPERATOR Action | |
| P | Issues the /STOP DATABASE command to stop the DEDB. |
| S | Issues the /START DATABASE command to start the DEDB. |
| DR | Issues the /DBRECOVERY DATABASE command with NOFE0V to stop the scheduling of transactions that update or read the DEDB. The IMS log does not switch to the next OLDS (online log data sets). |
| DF | Issues the /DBRECOVERY DATABASE without NOFE0V to stop the scheduling of transactions that update or read the DEDB. The IMS log switches to the next OLDS. |
| L | Issues the /LOCK DATABASE command to stop the scheduling of application programs that use the DEDB. |

| | |
|---------------------------|--|
| U | Issues the /UNLOCK DATABASE command to free a DEDB previously locked by the /LOCK DATABASE command. |
| D | Displays the AREA application, shown in Figure 64 on page 256, only for the database selected by the D line command. |
| DATABASE | The 1- to 8-character name of the DEDB. |
| TOTAL | The total number of database areas for the DEDB. |
| ACTIVE | The number of active areas for the DEDB. |
| STOPPED | The number of areas stopped for the DEDB. |
| NOT OPEN | The number of areas not opened for the DEDB. |
| STATUS | The current DEDB status, which can be: |
| blank | Status is not displayed, the DEDB is in normal operation. |
| ALLOCATION FAILURE | Dynamic allocation for the database was unsuccessful. |
| DATABASE IN ERROR | The database had a write error. |
| LOCKED | The /LOCK DATABASE command was issued for the DEDB. |
| STOPPED | The /STOP DATABASE command was issued for the DEDB. |
| NOT INIT | No DBD was found for the DEDB during IMS initialization. |
| NOT OPEN | The DEDB is available but not yet open. This is not an exception to normal operation. |

Exceptions off (X OFF) is the default. All databases are displayed, including those that are an exception to normal operation. If a database is operating normally, a status is not displayed. If X ON for exceptions on is entered in the primary command line as described in Chapter , “Resource Exception Command” on page 229, only databases in an exception to normal operation are displayed. The exception status can be:

LOCKED
STOPPED
NOT INIT

Managing Data Entry Database (DEDB) Areas

Select the AREA application, shown in Figure 83, from the DATABASE menu to display all areas.

| | | | | | | | | |
|-----------------------------|---------|----------|---------------------------------|----------|-------------------|---------|----------------|-----------------|
| BMC Software ----- | | | DATA ENTRY DATABASE AREAS ----- | | | | AutoOPERATOR | |
| COMMAND ==> | | | | | | | TGT ==> IMS410 | |
| LC CMDS: P(STOP), S(START), | | | DR(RECOVER NOFE0V), | | DF(RECOVER FE0V), | | D(SHOW ADS) | |
| | | | TOTAL | OVFLOW | SEQ DEP | ACTIVE | | |
| LC | AREA | DATABASE | ADS | PCT USED | PCT USED | UTILITY | ----- | STATUS ----- |
| | CUSA02A | BBFDDB02 | 0 | 0 | 0 | | | STOPPED |
| | CUSA020 | BBFDDB02 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA021 | BBFDDB02 | 1 | 14 | 29 | | | RECOVERY NEEDED |
| | CUSA022 | BBFDDB02 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA023 | BBFDDB02 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA024 | BBFDDB02 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA025 | BBFDDB02 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA026 | BBFDDB02 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA027 | BBFDDB02 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA028 | BBFDDB02 | 1 | 7 | 12 | | | I/O ERROR |
| | CUSA029 | BBFDDB02 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA03A | BBFDDB03 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA030 | BBFDDB03 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA031 | BBFDDB03 | 1 | 0 | 5 | SCAN | | |
| | CUSA032 | BBFDDB03 | 0 | 0 | 0 | CREATE | | FORMAT PHASE |
| | CUSA033 | BBFDDB03 | 0 | 0 | 0 | CREATE | | COPY PHASE |
| | CUSA034 | BBFDDB03 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA035 | BBFDDB03 | 0 | 0 | 0 | | | NOT OPEN |
| | CUSA036 | BBFDDB03 | 0 | 0 | 0 | | | NOT OPEN |

Figure 83. Fast Path AREA Application

This application shows a scrollable list of the Data Entry Data Bases defined for IMS by name. For each DEDB, it shows the area name, the number of area data sets (ADS), a usage percentage of independent overflow and sequential dependent control intervals, the active utility (if scheduled), and the current status of the DEDB area. Use the application to control the DEDB areas as follows:

| Column | Description |
|--|---|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the DEDB area you want to change: |
| Line Command MAINVIEW AutoOPERATOR Action | |
| P | Issues the /STOP AREA command to stop the DEDB area, which closes the data sets for the area and deallocates them. |
| S | Issues the /START AREA command to start the DEDB area, which reallocates the DEDB area data sets. |
| DR | Issues the /DBRECOVERY AREA command with NOFE0V, which stops the area, closes the data sets, and deallocates them. The IMS log does not switch to the next OLDS (online log data sets). |

DF Issues the /DBRECOVERY DATABASE without NOFEOV, which stops the area, closes the data sets, and deallocates them. The IMS log switches to the next OLDS>

D Displays the AREA DETAIL application, shown in Figure 65 on page 259, for the area selected by the D line command.

AREA

The 1- to 8-character area name.

DATABASE

The 1- to 8-character name of the DEDB that owns this area.

TOTAL ADS

The total number of area data sets for this area.

OVFLOW PCT USED

Percentage of independent overflow control intervals used.

SEQ DEP PCT USED

Percentage of sequential dependent overflow control intervals used. N/A is displayed if sequential dependents are not defined.

ACTIVE UTILITY

The type of utility active against this area, which can be:

| | |
|----------------|--|
| REORG | DEDB Reorganization utility |
| CREATE | DEDB Create utility |
| COMPARE | DEDB ADS Compare utility |
| SCAN | DEDB sequential dependent Scan utility |
| DELETE | DEDB sequential dependent Delete utility |

STATUS

The current area status, which can be:

blank

Status is not displayed; the DEDB area is in normal operation.

RECOVERY NEEDED

All Error Queue Elements (EQE) are used and the DEDB needs to be recovered.

STOPPED

The /STOP AREA command was issued for the area.

NOT OPEN

The area is not yet open. This is not an exception to normal operation.

Exceptions off (X OFF) is the default. All DEDB areas are displayed, including those that are an exception to normal operation. If the area is operating normally, a status is not displayed. If X ON is entered in the primary command line as described in Chapter , “Resource Exception Command” on page 229, only the areas in an exception to normal operation are shown. The exception status can be: RECOVERY NEEDED, or STOPPED.

Chapter 26. PROGRAM Application

Select the PROGRAM application, shown in Figure 84, from the CICS OPERATOR WORKSTATION panel.

| | | | | | |
|------------------------|---------------|-------------------------|--|----------------|--|
| BMC Software ----- | | PROGRAM ----- | | AutoOPERATOR | |
| COMMAND ==> | | | | TGT ==> IMS410 | |
| LC CMDS ==> P, S, L, U | | | | | |
| LC | PROGRAM- TYPE | ----- STATUS ----- | | | |
| | BBFPGM01 FP U | STARTED | | | |
| | BBFPGM02 FP N | STARTED | | | |
| | BBFPGM03 FP N | STARTED | | | |
| | BBFPGM04 FP N | STARTED | | | |
| | BBFPGM05 FP N | STARTED | | | |
| | BBFPGM06 FP M | PROGRAM STOPPED | | | |
| | BBFPGM07 FP N | STARTED | | | |
| | BBFPGM08 FP N | STARTED | | | |
| | BBFPGM09 FP N | STARTED | | | |
| | BBFPGM10 BMP | PROGRAM LOCKED | | | |
| | BBFPGM11 FP N | STARTED | | | |
| | BBFPGM12 FP N | STARTED | | | |
| | BBFPGM13 FP N | STARTED | | | |
| | BBFPGM14 TP | PROGRAM NOT INITIALIZED | | | |
| | BBFPGM15 TP | STARTED | | | |
| | BBFPGM16 FP N | STARTED | | | |
| | BBFPGM17 FP N | STARTED | | | |
| | BBFPGM18 FP N | STARTED | | | |
| | BBFPGM19 FP N | STARTED | | | |
| | BBFPGM20 FP N | STARTED | | | |

Figure 84. DBCTL PROGRAM Application

This application shows a scrollable list of application programs by name, identifies the application program type, and displays the current status of each program. Use the application as follows:

| Column | Description |
|---------|--|
| LC | The line command field. Enter one of the following 1-character line command on the line of the program you want to change: |
| | Line Command MAINVIEW AutoOPERATOR Action |
| | P Issues the /STOP PROGRAM command to stop the execution of the program. |
| | S Issues the /START PROGRAM command to start the program, which makes it available for scheduling. |
| | L Issues the /LOCK PROGRAM command to stop the scheduling of the program. |
| U | Issues the /UNLOCK PROGRAM command to free a program previously locked by the /LOCK command. |
| | |
| PROGRAM | The 1- to 8-character name of the program. |

| | |
|---------------|--|
| TYPE | <p>The type of application program, which can be:</p> <p>FP U Fast Path utility</p> <p>FP N Nonmessage-driven Fast Path application program</p> <p>FP M Message-driven Fast Path application program</p> <p>BMP Batch message processing program</p> <p>TP Message processing program (MPP)</p> |
| STATUS | <p>The current status of the application program which can be:</p> <p>STARTED</p> <p>The program is available.</p> <p>PROGRAM STOPPED</p> <p>The program is stopped because /STOP PROGRAM was issued.</p> <p>PROGRAM LOCKED</p> <p>The program is locked because /LOCK PROGRAM was issued.</p> <p>DATABASE STOPPED</p> <p>A database used by the PSB is stopped.</p> <p>PROGRAM NOT INITIALIZED</p> <p>No PSB was found for the program during initialization.</p> <p>Exceptions off (X OFF) is the default. All programs are displayed, including those that are an exception to normal operation. If X ON is entered in the primary command line as described in “Resource Exception Command” on page 229, only the programs in an exception to normal operation are shown. The exception status can be:</p> <p>PROGRAM STOPPED</p> <p>PROGRAM LOCKED</p> <p>DATABASE STOPPED</p> |

Chapter 27. REGIONS Application

Select the REGIONS application, shown in Figure 85, from the CICS OPERATOR WORKSTATION panel.

| | | | | |
|----------------------------|---|-------------|--------------------------|---|
| BMC Software | ----- | IMS REGIONS | ----- | AutoOPERATOR |
| COMMAND ===> | | | | TGT ===> IMS410 |
| #MPPS>> | 2/ 2 | #QUEUED>> | 9 DB2B>> NOT CONNECTED | INTVL===> 3 |
| #BMPS>> | 1 | #QUEUED>> | 0 DB2A>> CONNECTED/ 2/ 2 | STATUS--- INPUT |
| #IFPS>> | 0 | #QUEUED>> | 0 DB2C>> NOT CONNECTED | DATE----- 01/01/16 |
| LC CMDS: | P(STOP), A(ABDUMP), C(CANCEL), PW(STOP WFI) | | | TIME----- 15: 31: 01 |
| LC | JOBNAME | TYP | TRANCODE | PSBNAME LTERM CLS RGN WKSET # SIOS CPU TIME |
| | I14XMSG | MPP | DSN8PT | DSN8IH13 1 1 152K 284 2. 24 |
| | I14XMSG | MPP | DSN8CS | DSN8IC13 1 2 248K 283 3. 12 |
| | I14XBMP | BMP | TDRI VER | PDRIVER 4 3 228K 49 . 30 |
| ***** END OF REGIONS ***** | | | | |

Figure 85. DBCTL REGIONS Application

REGIONS displays the active IMS regions. New information is displayed each time the display refreshes at a user-specified interval. You can specify either the refresh mode or an input mode as follows:

- Refresh

Enter the screen refresh interval in seconds from 1 to 99 in the INTVL field. The default is the INTERVAL parameter value in the BMC Software-distributed BBPROF data set member BBITSP00.

Start screen refresh by pressing the GO key (PF6 or 18) or by entering GO in the command input line. Screen refresh is indicated by the message, RUNNING, displayed in the STATUS field.

Data cannot be entered until you press ATTN (SNA terminal) or PA1 (non-SNA terminal), which exits refresh and enters input mode. INPUT is displayed in the STATUS field.

- Input

To enter data in the application, it must be in input mode. If the application is in refresh, press ATTN (SNA terminal) or PA1 (non-SNA terminal) for input mode. The message, INPUT, is displayed in the STATUS field.

Commands can be entered in the command line, data can be entered in the TGT or INTVL fields, and the line commands can be used. Press ENTER to display the current IMS status.

The application shows the region status and a scrollable list of the active regions by name. The region status shown in the upper portion of the application displays:

- The number of message processing (MPPS) regions that are active and started (n/ n where n is an MPP count) and the number of batch message processing (BMPS) and Fast Path message processing (IFPS) regions that are active.
- The number of transactions waiting to be processed per region type (# QUEUED >> field).

- The name and status of the first three external subsystems defined to IMS and the number of regions connected to them.

The status can be:

CONNECTED/ n/ n

A connection has been established between IMS and DB2. The first number is the number of connected dependent regions and the second number is the number of dependent regions that are actually signed on to DB2.

NOT CONNECTED

The subsystem has been defined to IMS, but no connection exists.

CONNECTING

IMS is in the process of establishing a connection with the subsystem.

STOPPED

The IMS operator has issued a /STO SUBSYS command.

STOPPING

The IMS operator has issued a /STO SUBSYS command and the connection is in the process of stopping.

TERMINATING

The subsystem connection is in the process of terminating due to an internal request from IMS or DB2. This could be a normal or abnormal condition as indicated by IMS messages.

- The target IMS in the TGT field.
- The refresh interval in seconds in the INTVL field and the application mode status in the STATUS field (RUNNING for refresh or INPUT for application command entry).

The scrollable list in the lower portion of the REGIONS application shows all the active regions. Use the list to manage a region's status as follows:

| Column | Description |
|---|---|
| LC | The line command field. Enter any of the following 1- or 2-character line command on the line of the region you want to change: |
| Line Command MAINVIEW AutoOPERATOR Action | |
| P | Issues the /STOP REGION command to terminate the message processing region when the current transaction completes. |
| A | Issues the /STOP REGION P1 ABDUMP P2 to abnormally terminate an application program. |
| C | Issues the /STOP REGION CANCEL to stop a looping region that cannot be stopped by the /STOP REGION P1 ABDUMP P2 command. |
| PW | Issues the /STOP REGION P1 TRAN to stop a message processing program in wait-for-input (WFI) mode. |
| JOBNAME | The 1- to 8-character OS JOBNAME for the region |

| | |
|-----------------|---|
| TYP | The type of region, which can be: MPP Message processing or Fast Path mixed mode region MDP Message-driven Fast Path region FPU Fast Path utility region BMP Batch message processing region IFP Fast Path exclusive DBT DBCTL thread |
| TRANCODE | The transaction in progress. |
| PSBNAME | The scheduled program. |
| LTERM | The logical terminal used for input. |
| CLS | The processing class. |
| RGN | The region ID. |
| WKSET | The real storage in use. |
| # SIOS | The number of real I/Os. |
| CPU Time | The cumulative CPU time for the region. |

Part 5. Using the MAINVIEW AutoOPERATOR Access NV Option

This part contains chapters that describe the applications available with the MAINVIEW AutoOPERATOR Access NV option (also referred to simply as AutoOPERATOR Access NV).

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Chapter 28. Introduction to MAINVIEW AutoOPERATOR Access NV

MAINVIEW AutoOPERATOR Access NV (also referred to simply as AutoOPERATOR Access NV) bridges the functional gap between the IBM NetView product and the BMC Software MAINVIEW AutoOPERATOR product. MAINVIEW AutoOPERATOR Access NV builds a pipeline that provides direct communication between NetView and MAINVIEW AutoOPERATOR. This means that NetView and MAINVIEW AutoOPERATOR can send, retrieve, and act upon information between them.

The pipeline is structured in two major areas:

- An automation pipeline that provides interaction and exchange between NetView and MAINVIEW AutoOPERATOR variables and automation procedures.
- A user-interface pipeline that is a NetView emulator in MAINVIEW AutoOPERATOR. The emulator allows you to access all major NetView online functions from your MAINVIEW AutoOPERATOR terminal session, as though you were logged on to NetView. NetView access can be from a TSO, ISPF, VTAM, or EXCP terminal session.

CLIST and Variable Interaction

The following lists the CLIST and variable interaction:

- NetView and MAINVIEW AutoOPERATOR can each invoke each other's EXECs and CLISTs.
- Each product can send ALERTS to the other.
- NetView can invoke MAINVIEW AutoOPERATOR EXECs on remote or local systems.
- NetView can access MAINVIEW AutoOPERATOR global variables.

The NetView emulator in MAINVIEW AutoOPERATOR has the following capabilities:

- NetView commands and CLISTs can be invoked from MAINVIEW AutoOPERATOR screens.
- MAINVIEW AutoOPERATOR line commands can invoke NetView displays.
- NetView full screen support is supplied within MAINVIEW AutoOPERATOR.
- NetView can access multiple systems through MAINVIEW AutoOPERATOR sessions.
- A NetView emulator application is provided.
- ISPF terminal support is provided for NetView applications.

Storage Requirements

The MAINVIEW AutoOPERATOR Access NV option requires 250K of virtual memory in the NetView address space. Increase the REGION size in the NetView JCL by this amount.

For each OST that NetView starts, you need a minimum of 16KB. The MAINVIEW AutoOPERATOR Access NV OST within NetView only requires 10K.

NetView and MAINVIEW AutoOPERATOR Communication

Communication between the NetView address space and the MAINVIEW AutoOPERATOR address space is achieved by individual tasks in the address spaces. A task in the MAINVIEW AutoOPERATOR address space acts as the recipient of all requests issued through the NAIEXEC command from the NetView address space.

The task in the NetView address space services all requests addressed to it from the MAINVIEW AutoOPERATOR address space (IMFEXEC NETVIEW commands as well as emulator requests). The NetView task is implemented as an OPT (Optional task). At startup, NetView automatically attaches this task. Alternatively, a NetView operator can start the task manually.

A NetView address space in this configuration primarily addresses requests to one specific partner MAINVIEW AutoOPERATOR, the associated subsystem (SS). If a request is not specifically destined for this BBI-SS PAS, then MAINVIEW AutoOPERATOR routes the request to its final destination, which might be on a local or remote system.

Any MAINVIEW AutoOPERATOR on the same MVS system as the NetView system can request directly service from it. An MAINVIEW AutoOPERATOR request to NetView does not require a one-to-one connection.

The following figure illustrates an example of several BBI-SS PASs communicating with one NetView address space:

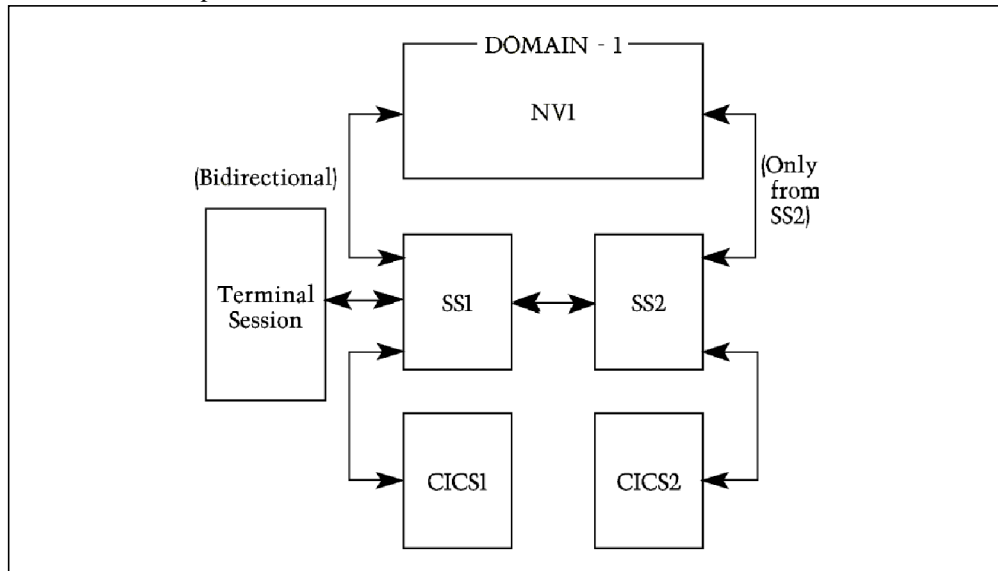


Figure 86. Multiple BBI-SS PASs Communicating with One NetView System

NetView communication to an MAINVIEW AutoOPERATOR requires that NetView attach to only one MAINVIEW AutoOPERATOR. For requests initiated in the MAINVIEW AutoOPERATOR address space, any number of SS-NV relationships can be maintained. This allows a terminal session to access a NetView system through its target (CICS1 or NV1 in this example).

In the example, the terminal session user, TS1, accesses CICS2 and enters a NetView command. The command is processed at the NetView related to CICS2, which is NV1.

NetView Full-Screen Emulation

NetView full-screen emulation is accomplished through two major components:

- The DSIEX02A standard output exit that intercepts all line mode data to a particular operator station task (OST). The OSTs for service of an MAINVIEW AutoOPERATOR request can be started either as part of NetView's initialization processing or started automatically, whenever it is required.
- The panel service emulator that intercepts all requests to NetView panel services from an OST that services MAINVIEW AutoOPERATOR requests.

Note: Only the panel service requests for a particular OST are affected and the general NetView system functionality remains the same. The panel service emulator appears to any CLIST or command processor running under this OST as a full-screen 3270 terminal with a screen length of 24 lines and a screen width of 80 characters. All NetView variables are set correctly.

Chapter 29. NAIEXEC NetView Command Processor

The NAIEXEC command processor represents the CLIST (or REXX) link between the NetView address space and the associated MAINVIEW AutoOPERATOR. It allows you to:

- Invoke an EXEC in any remote or local MAINVIEW AutoOPERATOR associated with the processor complex
- Generate an MAINVIEW AutoOPERATOR ALERT on any MAINVIEW AutoOPERATOR
- Modify any global variable on any MAINVIEW AutoOPERATOR

NetView Variables

The NAIEXEC command processor sets two NetView task global variables: NAICC and NAIRC. Task global variables are variables that can be referenced only by CLIST EXECs and REXX EXECs that run under the same task. Refer to page 341 for a discussion and examples of the NAIEXEC VGET command and for information about how to retrieve these variables.

NAICC

NAICC is equivalent to the TSO LASTCC or batch condition code. It indicates if a command was partially or completely executed or if a severe error was encountered during execution.

These are the possible condition codes for NAICC and their meanings:

| Value | Description |
|-------|---|
| 0 | Command executed successfully |
| 4 | Command timed out |
| 8 | Target not available or invalid |
| 12 | Syntax error in command |
| 16 | Subcommand keyword missing or command is incomplete |
| 20 | Invalid or unknown subcommand |
| 24 | Error encountered during execution |
| 28 | Unknown error occurred |
| 32 | Unable to set NetView variable or NAISVAR CLIST not available |
| 36 | Unable to establish session |

NAIRC

NAIRC indicates the actual result of the operation. It is set only when the variable manipulation commands or the NAIEXEC SELECT command are used.

The possible NAIRC values and their meanings are documented with the individual services. For the NAIEXEC SELECT command, NAIRC contains the IMFRC value generated by the EXEC if the IMFEXEC EXIT statement was specified.

NAIEXEC Commands

The following sections discuss each command in detail and explain the expected return codes.

Note: The maximum length of any NAIEXEC command must not exceed 255 characters.

Warning

NAIEXEC command statements are designed to be used only in a NetView address space. They do not execute correctly when used within an MAINVIEW AutoOPERATOR

NAIEXEC ALERT

The NAIEXEC ALERT command generates an ALERT in any associated MAINVIEW AutoOPERATOR defined in the BBIJNT00 member of the BBPARM data set. This command is similar to the IMFEXEC ALERT command.

| Command | Parameters | Description. |
|---------|---------------------------|--|
| ALERT | alert-key (name of alert) | The alert-key is used when deleting the alert. Maximum length is 64 alphanumeric positions. |
| | 'alert-text' | Text of the ALERT message. Maximum message length is 230 alphanumeric positions. |
| | ALARM(<i>NO</i>) | Indicates if an audible alarm is emitted from the terminal and places the message IMPORTANT ALERT in the upper right-hand corner of the screen. |
| | COLOR(<i>WHITE</i>) | Specifies the color of the alert. This overrides the color assigned by PRIORITY. The possible colors are: RED PINK YELLOW DKBLUE LTBLUE GREEN WHITE |
| | EXEC(execname) | Specifies the name of the follow-up EXEC and its operands. Maximum length is 230 characters. |
| | HELP(panelname) | Specifies the name of an extended description member of BBPLIB shown on the “Extended Alerts” panel. Maximum length is 8 characters. |

| Command | Parameters | Description. |
|---------|--------------------------------|---|
| | PCMD ('command string') | A primary command string that the terminal user can execute. This command will perform as if it were entered at the display's command line. Maximum length is 230 characters. |
| | PRI (<i>WARNING</i>) | Specifies the priority of the alert. They are as follows: CRITICAL MAJOR MINOR WARNING INFORMATIONAL CLEARING |
| | QUEUE (<i>MAIN</i>) | Specifies the name of the queue to use. |
| | TARGET (name) | Specifies the system to which the alert is sent. |
| | ORIGIN () | Allows you to override the origin of the alert. If you execute the command specified in PCMD(), then the BBI-TS user's target is automatically switched to the origin of the alert. |
| | USER (userid) | Specifies the name of a user ID that the alert is addressed to. |

The syntax of the NAIEXEC ALERT command is:

```
NAIEXEC ALERT key 'text' COLOR() ALARM() EXEC() TARGET() ORIGIN()
```

For example:

```
NAIEXEC ALERT CACB 'CICS ACB INACTIVE' EXEC(STCACB) TARGET(CA01)
```

generates an MAINVIEW AutoOPERATOR ALERT with a key of CACB. The ALERT is generated in the MAINVIEW AutoOPERATOR CA01 with the text CICS ACB INACTIVE. When the operator selects this ALERT, the EXEC STCACB is scheduled.

The return codes are:

| | |
|--------------|--|
| NAICC | As defined in “NetView Variables” on page 335. |
| NAIRC | Not used. |

The combined length of the completed statement can be no more than 255 characters, even though the combined allowable length of all the parameters would be much greater.

NAIEXEC SELECT

The NAIEXEC SELECT command invokes a CLIST in any associated MAINVIEW AutoOPERATOR that is defined in the Job Name Table (BBIJNT00).

| Command | Parameters | Description. |
|---------|--|-------------------------------------|
| SELECT | EXEC(execname p1...pn) TARGET(tgtname) WAIT(n) | Schedule an EXEC on another system. |

The syntax is:

```
NAI EXEC SELECT EXEC(execname p1 . . pn) TARGET(tgtname) WAIT(20)
```

where:

| | |
|------------------------|--|
| EXEC(execname) | Allows you to specify the name of an EXEC to be invoked. The EXEC you specify with this keyword is known as the called EXEC. Required |
| p1...pn | Is any number of optional parameters to be passed to the EXEC. Optional |
| TARGET(tgtname) | Identifies a name of the MAINVIEW AutoOPERATOR SS on which the EXEC is to be invoked. If not given, the EXEC is scheduled on the associated MAINVIEW AutoOPERATOR. The MAINVIEW AutoOPERATOR SS must have the Access NV key. Optional |
| WAIT(n) | Allows you to specify, in seconds, the amount of time that the EXEC is to wait for completion of the called EXEC before it signals a timeout to the calling EXEC. Optional The default is 30 seconds. |

The total length of the command cannot exceed 255 characters.

The called EXEC is scheduled synchronously to the calling EXEC. This means the CLIST issuing the NAIEXEC command is suspended until the called EXEC terminates or the request times out (default is 30 seconds).

The return code generated by the called EXEC can be retrieved by examining the results of the NAIRC variable. The contents of NAIRC are undefined in the case of a non-zero NAICC code from this service.

The NetView operator ID, under which this command is issued, must have EXEC authority *and* any additional authority required to execute the commands contained in the EXEC. Refer to the MAINVIEW AutoOPERATOR *Customization Guide* for more information about authority issues.

For example:

```
NAI EXEC SELECT EXEC(CHKNET01 RD1217) TARGET(MA01) WAIT(25)
```

schedules the EXEC named CHKNET01 with the parameter RD1217 in the MAINVIEW AutoOPERATOR address space MA01. The address space MA01 must either be the MAINVIEW AutoOPERATOR subsystem ID or a valid target defined in the MAINVIEW AutoOPERATOR BBPARM member BBIJNT00. The calling EXEC will wait 25 seconds for the completion of CHKNET01. If CHKNET01 does not complete in 25 seconds, NAICC is set to a value of 4.

The return codes are:

| | |
|--------------|---|
| NAICC | As defined in “NetView Variables” on page 335. |
| NAIRC | Contains the value of the MAINVIEW AutoOPERATOR IMFRC variable, which is set by the IMFEXEC exit code (nn) statement in the MAINVIEW AutoOPERATOR EXEC. |

NAIEXEC VDEL

Use the NAIEXEC VDEL command to delete one or more MAINVIEW AutoOPERATOR global variables.

| Command | Parameters | Description. |
|---------|-----------------------------------|---------------------------------------|
| VDEL | var (v1 v2...) TARGET(tgtname) | Deletes one or more global variables. |

The syntax is:

```
NAI EXEC VDEL var TARGET(tgtname)
```

or

```
NAI EXEC VDEL (v1 v2 v3. . .) TARGET(tgtname)
```

where:

| | |
|------------------------|---|
| var | Is the name of an MAINVIEW AutoOPERATOR global variable. (Maximum length is 32 alphanumeric characters.) Required |
| (v1 v2...) | Is a list of MAINVIEW AutoOPERATOR global variables, separated by commas or blanks. (Maximum length is 230 characters.) Required |
| TARGET(tgtname) | Specifies the name of the MAINVIEW AutoOPERATOR where the variable should be deleted. Using the TARGET keyword it is possible to route the request to any MAINVIEW AutoOPERATOR in the processor complex known to the associated MAINVIEW AutoOPERATOR through the BBPARM member BBIJNT00 in the MAINVIEW AutoOPERATOR address space. If not given, the variable is deleted in the associated MAINVIEW AutoOPERATOR SS. The MAINVIEW AutoOPERATOR SS must have the Access |

NV key.
Optional

For example:

```
NAIEXEC VDEL (TRANSERR STARTERR OPENERR) TARGET(SSA1)
```

deletes the MAINVIEW AutoOPERATOR global variables TRANSERR, STARTERR, and OPENERR in the MAINVIEW AutoOPERATOR subsystem SSA1.

The return codes are:

| | |
|--------------|--|
| NAICC | As defined in “NetView Variables” on page 335. |
| NAIRC | 0 = Variable Deleted |
| | 8 = Variable Not Found |

NAIEXEC VGET

Use the NAIEXEC VGET command to retrieve the value of an MAINVIEW AutoOPERATOR global variable available in the NetView address space. The contents of this variable are placed into one of the OST's global variables.

| Command | Parameters | Description |
|---------|-----------------------------------|---|
| VGET | nvvar [FROM(var) TARGET(tgtname)] | Retrieves the value of a global variable in the MAINVIEW AutoOPERATOR address space and make it available to the NetView address space. |

The syntax of the command is:

```
NAIEXEC VGET nvvar FROM(var) TARGET(tgtname)
```

where:

| | |
|------------------------|---|
| var | Is the name of an MAINVIEW AutoOPERATOR global variable. (Maximum length is 32 alphanumeric characters.) Do not use a leading ampersand (&). Optional. If not specified, nvvar will be used as the variable to VGET from MAINVIEW AutoOPERATOR address space. |
| nvvar | Is the name of a NetView variable that receives the contents of the MAINVIEW AutoOPERATOR global variable. Use the NetView naming conventions. Do not specify a leading ampersand (&) sign. The maximum length for the name of a NetView CLIST variable is 11 characters and for NetView REXX variables is 31 characters. Required |
| TARGET(tgtname) | Specifies the name of the MAINVIEW AutoOPERATOR where the variable should be retrieved from. Using the TARGET keyword, it is possible to route the request to any MAINVIEW AutoOPERATOR in the processor complex known to the associated MAINVIEW |

AutoOPERATOR through the BBPARM member BBIJNT00 in the MAINVIEW AutoOPERATOR address space. If not given, the variable will be retrieved from the associated MAINVIEW AutoOPERATOR.
Optional

After VGET executes, examine NAICC and NAIRC to determine if the variables were successfully retrieved or were not defined in the designated MAINVIEW AutoOPERATOR. If a variable with the indicated NetView name already exists under the executing OST, the value of this variable is overwritten.

For example:

```
NAI EXEC VGET QSMFID
GLOBALV GETT QSMFID
```

retrieves the value of the MAINVIEW AutoOPERATOR global variable QSMFID.

The value is retrieved from the associated MAINVIEW AutoOPERATOR BBI-SS PAS. The value of &TGLOBAL or GLOBALV GETT for CLIST EXECs (and 'GLOBALV GETT' or 'GLOBALV DEFT' for REXX EXECs) is required to be able to retrieve variables set by the NAIEXEC command processor. Refer to the IBM publication *NetView Customization Guide: Writing Command Lists* for information about NetView TASK global variables. This information is also necessary for the NAICC and the NAIRC variables; for example:

```
GLOBALV GETT NAICC, NAIRC
```

or

```
&TGLOBAL NAICC, NAIRC
```

The contents of this variable are stored in the task global variable for this OST as QSMFID.

Note: VGET requires that the NAISVAR CLIST is installed. NAIEXEC invokes this CLIST to set variables NAICC and NAIRC and other variables returned by the NAIEXEC VGET command. The maximum length of the value of an MAINVIEW AutoOPERATOR variable returned to NetView to become a NetView variable is 213 characters.

The return codes are:

| | |
|--------------|--|
| NAICC | As defined in “NetView Variables” on page 335. |
| NAIRC | 0 = Request Completed Successfully |
| | 8 = Variable Not Found |

NAIEXEC VPUT

Use the NAIEXEC VPUT command to set an MAINVIEW AutoOPERATOR global variable to a certain value.

| Command | Parameters | Description. |
|---------|---|---|
| VPUT | varname FROM('value') TARGET(tgtname) | Sets an MAINVIEW AutoOPERATOR global variable to a certain value. |

The syntax is:

```
NAI EXEC VPUT varname FROM('value') TARGET(tgtname)
```

where:

| | |
|------------------------|--|
| varname | Is the name of the global MAINVIEW AutoOPERATOR variable to set. The variable might already exist. Do not use a leading ampersand (&) sign. (Maximum length is 32 alphanumeric characters.) Required |
| value | Is the value you assign to the MAINVIEW AutoOPERATOR global variable. You must place the value in single quotes if it contains blanks or special characters. A NetView variable can be used. Required |
| TARGET(tgtname) | Is the name of the MAINVIEW AutoOPERATOR where you set the variable. NAIEXEC VPUT uses the TARGET keyword to route the request to any MAINVIEW AutoOPERATOR in the processor complex known to the associated MAINVIEW AutoOPERATOR through the BBPARM member BBIJNT00 in the MAINVIEW AutoOPERATOR address space. If not given, the variable is set in the associated MAINVIEW AutoOPERATOR. The MAINVIEW AutoOPERATOR SS must have the Access NV key. Optional |

For example:

```
NAI EXEC VPUT CICSACB FROM('ACTIVE')
```

sets the value of the global variable CICSACB in the associated MAINVIEW AutoOPERATOR to ACTIVE. You do not need to specify the target because this value defaults to the subsystem specified in DSIPARM member NAI OPT00. Refer to the MAINVIEW AutoOPERATOR Customization Guide.

The return codes are:

| | |
|--------------|--|
| NAICC | As defined in “NetView Variables” on page 335. |
| NAIRC | 0 = Variable Updated 4 = Variable Created |

Chapter 30. IMFEXEC NetView Command Processor

The IMFEXEC NetView command processor represents the EXEC link between the MAINVIEW AutoOPERATOR address space and any NetView system. The issuing MAINVIEW AutoOPERATOR need not be the associated MAINVIEW AutoOPERATOR of the target NetView. With NetView, you can invoke a NetView CLIST, a REXX EXEC, or a command in the target NetView system.

Upon termination of the NETVIEW command, the IMFCC variable will contain one of the following values:

| Value | Description |
|-------|--|
| 0 | Command executed successfully |
| 4 | MAINVIEW AutoOPERATOR for NetView not installed in target or not started |
| 8 | Jobname not available or invalid |
| 12 | Request timed out |
| 16 | Syntax error in command |

| Command | Parameters | Description |
|---------|-------------------------------|---|
| NETVIEW | 'command' WAIT() JOBNAME() | Invokes a NetView CLIST, REXX EXEC, or a NetView command. |

The syntax for the command is:

```
IMFEXEC NETVIEW 'command' WAIT(wsec) JOBNAME(jobname)
```

where:

| | |
|------------------|--|
| 'command' | Is any valid NetView command. This command must be non-conversational because the EXEC cannot reply to any generated prompts. |
| wsec | Is the number of seconds the EXEC waits for the successful execution of the command. You do not have to wait if the results do not need to be checked. The default is 10 seconds. |
| jobname | Is the name of a NetView address space where the command is to be issued. MAINVIEW AutoOPERATOR for NetView must be installed in this address space. If you do not specify the jobname, then this command defaults to the jobname specified in the BBISSP00 member of BBPARM. Parameter is NetView=. |

When the request is completed, the MAINVIEW AutoOPERATOR variable IMFNOL contains the actual number of lines of output generated by NetView in response to this command. The individual lines are placed into the local variables LINE1 through LINEnn. The current maximum data to be returned is approximately 7000 characters.

For example:

```
IMFEXEC NETVIEW 'MAJNODES' WAIT(15) JOBNAME(CNM01)
```

issues the NetView MAJNODES command in the NetView address space CNM01. It allows up to 15 seconds to return the results to the EXEC before timing out.

Note: Invoking a full screen processor causes an error message to be returned to the EXEC. The person who writes the EXEC must ensure that only line-mode type output is produced. A maximum of approximately 7000 characters of data can be retrieved using a single call.

Chapter 31. MAINVIEW AutoOPERATOR Access NV Operator Workstation

MAINVIEW AutoOPERATOR Access NV allows an MAINVIEW AutoOPERATOR terminal session user to access any NetView online application without leaving the terminal session environment or logging on to a VTAM terminal.

All functions of NetView emulation are accessed from one central application using standard I/O emulation. The following section describes this mode.

Full-screen access to NetView 3.1 is not supported in AutoOPERATOR 4.1 and higher. For more information about full-screen emulation, refer to “Full-Screen Emulation” on page 346.

Standard I/O Emulation

Standard mode display emulation in MAINVIEW AutoOPERATOR Access NV intercepts all data from command processors that use the DSIPSS TYPE=OUTPUT, TYPE=FLASH, or TYPE=IMMED macro format. This type of output is a line-oriented mode that drives the screen asynchronously. Most of the NetView NCCF commands are examples of this kind of output; for example, the display commands or the CLIST WRITE statement.

The invocation of a single command processor might result in zero to any number of lines returned in this way. MAINVIEW AutoOPERATOR Access NV waits for the OST to return to its wait for command input. It gathers all the information returned by NetView and presents it to the terminal session user. Because more than one page of information can be formatted, you can examine the output by using the UP and DOWN (PF7/PF8) scroll keys.

Figure 87 is an example of NetView output.

```
BMC Software ----- NetView OPERATOR WORKSTATION ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Interval ==> 1 Netview System ==>CNMPROC TGT ==> CHI CAGO
Status --- INPUT Date --- 01/02/04
NV CMD ==> MAJNODES Time --- 15:17:56
MAJNODES
DISPLAY NET MAJNODES
IST097I DISPLAY ACCEPTED
IST350I DISPLAY TYPE = MAJOR NODES
IST089I VTAMSEG TYPE = APPL SEGMENT ACTIV
IST089I ISTPUS TYPE = PU T4 5 MAJ NODE ACTIV
IST089I AGDM01 TYPE = APPL SEGMENT ACTIV
IST089I ATSOB TYPE = APPL SEGMENT ACTIV
IST089I LNCPV3U TYPE = PU T4 5 MAJ NODE ACTIV
IST089I NCP790T TYPE = PU T4 5 MAJ NODE ACTIV
IST089I A3725P TYPE = PU T4 5 MAJ NODE ACTIV
IST089I CDRM00 TYPE = CDRM SEGMENT ACTIV
IST089I CDRSC00 TYPE = CDRSC SEGMENT ACTIV
IST089I BS40 TYPE = LCL SNA MAJ NODE ACTIV
IST089I BB20 TYPE = LCL 3270 MAJ NODE ACTIV
IST089I BB60 TYPE = LCL 3270 MAJ NODE ACTIV
IST089I BS80 TYPE = LCL SNA MAJ NODE ACTIV
IST089I BSA0 TYPE = LCL SNA MAJ NODE ACTIV
IST089I BSA1 TYPE = LCL SNA MAJ NODE ACTIV
```

Figure 87. NetView Line Mode Output in an ISPF Window

Any data that is not retrieved before the command returns is saved in the NetView address space; the maximum is approximately 7000 characters. This data can be retrieved by not entering a command on the command line and pressing the Enter key.

Full-Screen Emulation

Full-screen access to NetView 3.1 is not supported in AutoOPERATOR 4.1 and higher. To access NetView, use the OSPI function, which provides a consistent and reliable interface.

In order to use OSPI, you must define and activate ACBs which can be used to communicate with the NetView address space. For instructions on customizing OSPI, refer to “Defining OSPI Virtual Terminals” in the AutoOPERATOR *Customization Guide*.

To invoke a full-screen application:

1. On the terminal session command line, type OSPI .

The OSPI scripting panel appears.

2. Type the NetView application ID.
3. Type the logmode.
4. Press Enter.

The NetView logon panel appears.

5. Proceed with normal logon and invoke the desired full-screen application.

Note: If you have been using the Access/NV workstation and want to use the same userid to log on to NetView, prior to invoking OSPI you must issue a log off command from the workstation NetView command line.

NetView Emulator Profile Panel

Use the NetView Emulator Profile panel to determine whether the OST used for communicating with NetView is automatically logged off when you leave this application.

To access the NetView Emulator Profile panel, type:

PROFILE

at the COMMAND line of Figure 87 on page 345. The panel in Figure 88 on page 347 is displayed.

On this panel, you can specify Yes or No in the field:

Auto LOGOFF ==>

If you specify Yes and the OST is logged off, a new LOGON statement is processed every time you enter the application. Therefore, for performance reasons, it is recommended that you specify No.

| | |
|--|-------------------|
| BMC Software ----- NetView Emulator Profile ----- AutoOPERATOR | |
| COMMAND ==> | DATE --- 01/02/07 |
| | TIME --- 17:07:50 |
| Auto LOGOFF ==> YES | |
| Enter CANCEL to cancel, END to save | |

Figure 88. NetView Emulator Profile Panel

Part 6. Appendixes

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Appendix A. SYSPROG User Exit

This appendix contains the following discussions:

- General Description
- Entry Code table
- Linking to and from SYSPROG
- Entry Point Descriptions
- Sample User Exit

General Description

The user-written exit routine¹ receives control when the reasons or conditions listed in the entry code table occur. The user exit routine must be reentrant since it may be invoked by several tasks executing concurrently.

Entry Code Table

The following is a list of entry codes and names for each reason or condition. The name is used as a keyword in the ASTUXBGN and UXENTER macros.

Table 6. Entry Code Table

| Code | Name | Condition or Reason. |
|------|---------|---|
| 0 | AINIT | At the completion of initialization of SYSPROG |
| 4 | AMABEND | If the SYSPROG main task abends (from the main task's ESTAE routine) |
| 8 | AMTERM | When the SYSPROG main task terminates normally |
| 12 | AATERM | If the asynchronous manager abends (from the asynchronous manager's STAE routine) |
| 16 | ASSERV | When the SYSPROG main task invokes each service |
| 20 | AFSERV | When a service invoked by the SYSPROG main task fails |
| 24 | AASBEG | At the start of the asynchronous manager's processing cycle |
| 28 | AASEND | At the end of the asynchronous manager's processing cycle |
| 32 | AASSTRT | When the asynchronous manager invokes each asynchronous service |
| 36 | AASFAIL | When a service invoked by the asynchronous manager fails |
| 40 | ALGBEG | At the start of the logging manager's processing cycle |
| 44 | ALGEND | At the end of the logging manager's processing cycle |
| 48 | ALGABND | When the logging manager terminates abnormally |

¹ The user-written exit routine module name is ASTXA1UE for XA and ESA systems, and ASTMVSUE for prior systems.

Table 6. Entry Code Table (Continued)

| Code | Name | Condition or Reason. |
|-------------|-------------|---|
| 52 | ALGFAIL | When a service invoked by the logging manager fails |
| 56 | ALGSTRT | When a logging manager invokes each service |
| 60 | AXMFAIL | When the cross-memory manager detects that an SRB abended |
| 64 | ACMDIN | When the main task receives command input from the operator |
| 68 | ATPSTOP | When the TP monitor stops a terminal |
| 72 | ATPABND | When the TP monitor abends |
| 76 | ATPRDER | When the TP monitor encounters a READ I/O error |
| 80 | ATPWRRER | When the TP monitor encounters a WRITE I/O error |
| 84 | ATPEND | When the TP monitor terminates normally |
| 88 | APWCHK | Main task password check |
| 92 | APWBAD | Main task's password verification failed |
| 96 | Unused | |
| 100 | Unused | |
| 104 | ACNCMD | When the CNSL Service is about to execute an MVS command |
| 108 | APWGOOD | Main task's password validation OK |

Linking to and from SYSPROG

The following sections describe how to use the ASTUXBGN|UXENTER macro to link to and from SYSPROG.

ASTUXBGN|UXENTER Macro

The ASTUXBGN|UXENTER macro establishes linkage to and from SYSPROG. It also:

- Provides a standard OS register save area, which can be followed by an optional work area.
- Sets up addressability to the SYSPROG AVT in Register 11.
- Defines a base register for itself in Register 12.
- Creates the branch table pointing to each of the routines the user has provided, filling in null entries for those omitted.

To specify the entry points that you wish to utilize in your user exit, locate the names for the entry points in the “Entry Code Table” on page 351. Use each name, followed by an equal sign and the label of the subroutine to process the condition as keyword parameters on the ASTUXBGN (or UXENTER) macro.

Example:

```
ASTUXBGN APWGOOD=label 1, APWBAD=label 2
```

Macro ASTUXBGN (and UXENTER) generates prologue and epilogue code for the user exit and therefore must be the first statement in the user exit.

Register Conventions and Return Codes

When control is passed to ASTMVSUE, the register setup is as follows:

| | |
|------------|--|
| R0 | The function code identifying the exit routine to receive control. |
| R1 | The address of the AVT. |
| R2 | Refer to the specific entry point description in “Entry Point Descriptions”. |
| R13 | The address of a standard OS save area. |
| R14 | The return address. |
| R15 | The address of the entry point of ASTMVSUE. |

User Words

Two anchor points, described below, are provided for communication between user-written services and exit routines. These fields may be used to anchor user-defined control blocks.

- AVTUSER, a fullword in the AVT
- ADAUSER, a fullword in the ADA

Entry Point Descriptions

Each entry point and the status that exists when the entry point is called and the possible return codes that the exit may return are listed below.

Initialization (AINIT)

Receives control from the SYSPROG main task after all other initialization is complete.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Valid return codes are:

0 – Continue

Non-0 – Abort; SYSPROG will terminate immediately

Parameter on ASTUXBGN|UXENTER macro: AINIT=label

Main Task Abend (AMABEND)

Received control from the SYSPROG main task ESTAE routine.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Address of SDWA passed to the ESTAE routine or zero if there was no SDWA available

Return codes are not significant.

PARAMETER on ASTUXBGN|UXENTER macro: AMABEND=label

Note: GSDA has been freed; therefore, no SRBs may be scheduled by the ASTXMS|XMEMORY macro.

The following should be noted:

- Both REALTIME and the advanced early warning system have been stopped.
- The SYSPROG address space has been made swappable again.
- SYSPROG is still authorized.

Main Task Termination (AMTERM)

Receives control from the SYSPROG main task termination routine.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: AMTERM=label

Note: GSDA has been freed; therefore, no SRBs may be scheduled by the ASTXMS|XMEMORY macro.

The following should be noted:

- Both REALTIME and the advanced early warning system have been stopped.
- The SYSPROG address space has been made swappable again.
- SYSPROG is still authorized.

This exit will be taken even though termination was requested by the user's initialization exit routine.

Service Starting (ASSERV)

Receives control just before the SYSPROG service is loaded and attached.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Valid return codes are:

0 – Continue; that is, load and attach the service

Non-0 – Abort; bypass the service; prompt for next command

Parameter on ASTUXBGN|UXENTER macro: ASSERV=label

Note: BLDL and password checking, if any, have been completed.

The AVT has been set up for the service; for example, the first two characters of the AVTReply field contain the module suffix.

Service Failure (AFSERV)

Receives control from the SYSPROG main task after it has been determined that a SYSPROG service has abended.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: AFSERV=label

Notes

- Message AMT006I, informing the operator of the command failure, has already been issued.
- The AVTECB field in the AVT is the ECB that has been posted at the failing service's task end. It contains the abend or return code.

Asynchronous Manager Abend (AATERM)

Receives control from the asynchronous manager's ESTAE routine.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Address of the SDWA passed to the ESTAE routine or to zero if there was no SDWA available

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: AATERM=label

Asynchronous Manager Begin (AASBEG)

Receives control from asynchronous manager when its time interval has expired.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Valid return codes are:

0 – Continue

Non-0 – Bypass this asynchronous cycle

Parameter on ASTUXBGN|UXENTER macro: AASBEG=label

Asynchronous Manager End (AASEND)

Receives control from asynchronous manager before the STIMER is issued to wait for the next interval.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Valid return codes are:

0 – Continue; issue the STIMER for another interval

Non-0 – Terminate the asynchronous manager task

Parameter on ASTUXBGN|UXENTER macro: AASEND=label

Note: The asynchronous manager's AVT and GSDA have been freed. Therefore, the ASTXMS|XMEMORY macro may not be issued.

Asynchronous Service Begin (AASSTRT)

Receives control from the asynchronous manager before each service is attached.

Valid parameters are:

Reg 1 – Address of the asynchronous manager's AVT

Reg 2 – Not significant

Valid return codes are:

0 – Continue; attach the asynchronous service

Non-0 – Bypass this service

Parameter on ASTUXBGN|UXENTER macro: AASSTRT=label

Note: The AVTRESPY field has been set up to appear as it will for the service that is being invoked.

Asynchronous Service Failed (AASFAIL)

Receives control from asynchronous manager when it detects that an asynchronous service has ended abnormally.

Valid parameters are:

Reg 1 – Address of the asynchronous manager's AVT

Reg 2 – The address of the service entry in the ADA containing the name of the module and its report interval

Parameter on ASTUXBGN|UXENTER macro: AASFAIL=label

Note: The ADAECB field in the ADA is the ECB that has been posted at the failing service's task end. It contains the abend code if the service abended or the return code if it ended normally.

Logging Manager Start (ALGBEG)

Receives control from the logging manager each time it is invoked

by the asynchronous manager. Valid parameters are:

Reg 1 – Address of logging manager's AVT

Reg 2 – Address of a fullword containing the address of the first command in the logging list

The first word of each entry is a forward pointer to the next entry or zero if it is the last entry in the list. Following the forward pointer, there is either a logging command (for example, EJECT) or the data that will be moved into the AVTRESPY field when the service is invoked by the logging manager.

Valid return codes are:

0 – Continue; process the current logging cycle.

Non-0 – Bypass this logging cycle.

Parameter on ASTUXBGN|UXENTER macro: ALGBEG=label

Logging Manager End (ALGEND)

Receives control from the logging manager after it has completed a cycle through its list of services.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: ALGEND=label

Logging Service Start (ALGSTRT)

Receives control from the logging manager each time it attaches a service.

Reg 1 – Address of real AVT

Reg 2 – Not significant

Valid return codes are:

0 – Continue; attach the service

Non-0 – Bypass this logging service

Parameter on ASTUXBGN|UXENTER macro: ALGSTRT=label

Logging Service Failure (ALGFAIL)

Receives control from the logging manager after it has detected that the ECB for the logged service indicates something other than a syntax error.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: ALGFAIL=label

Note: The TCB for the logged service has already been detached.

Logging Manager Abend (ALGABND)

Receives control from the logging manager's ESTAE routine when it is abending.

Valid parameters are:

Reg 1 – Address of logging manager's AVT

Reg 2 – Address of the SDWA or zero if there is no SDWA

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: ALGABND=label

Cross-Memory Failure (AXMFAIL)

Receives control from the cross-memory manager when it detects that a scheduled SRB has abended.

Valid parameters are:

Reg 1 – Address of the caller service's AVT

Reg 2 – Two's complement of 1024

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: AXMFAIL=label

Note: The cross-memory manager has already issued the error message (AMTXM2I) and saved a copy of the GSDA in the SYSPROG address space (in subpool 2). After receiving control back from the user exit routine, the cross-memory manager will finish cleaning up and issue an abend 800 to cancel the caller subtask with a dump. The user routine can prevent the abend by resetting register 2 to +1024 when control is returned.

Command Input (ACMDIN)

Receives control from the SYSPROG main task after receiving a command from the operator.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Valid parameters are:

Reg 1 – Address of real AVT.

Reg 2 – The address of an 80-character field containing the input character string.

Valid return codes are:

0 – Continue parsing the input character stream.

Non-0 – The input command will be ignored.

Parameter on ASTUXBGN|UXENTER macro: ACMDIN=label

Note: The character string will have been converted to uppercase and checked for all blanks. The user exit routine will not receive control if there is no input; that is, it is all blanks.

TP Monitor Stops a Terminal (ATPSTOP)

Control is passed to this exit routine when the TP monitor detects an excessive number of I/O errors for a terminal and deactivates it.

Valid parameters are:

Reg 1 – Address of real AVT

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: ATPSTOP=label

TP Monitor Abends (ATABND)

Control is passed to this exit from the TP monitor's ESTAE routine.

Valid parameters are:

Reg 1 – Address of real AVT

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: ATPABND=label

TP Monitor Detects Read I/O Error (ATPRDER)

An error was encountered trying to read from the BTAM line group. The TP monitor will abort when control is returned to it from this exit. Not available under TSO.

Valid parameters are:

Reg 1 – Address of real AVT

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: ATPRDER=label

TP Monitor Detects Write I/O Error (ATPWRER)

An error was encountered trying to write to one of the terminals allocated to the TP monitor. Available under TSO.

Valid parameters are:

Reg 1 – Address of real AVT

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: ATPWRER=label

TP Monitor Normal End (ATPEND)

Receives control when TP monitor is terminating.

Valid parameters are:

Reg 1 – Address of real AVT

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: ATPEND=label

User Password/Authorization Check (APWCHK)

Receives control from the SYSPROG command input routine after a BLDL has determined that the required module is available.

Valid parameters are:

Reg 1 – Address of AVT for invoked service

Valid return codes are:

0 – Proceed with normal SYSPROG password check

4 – User is authorized to execute this SYSPROG service

8 – Abort this service; user is not authorized

Parameter on ASTUXBGN|UXENTER macro: APWCHK=label

Note: The AVTREPLY field in the AVT contains the module suffix (for example, B2, followed by the specified operands). The user exit routine may change the operand as an alternative to refusing to authorize the use of the service.

Password Verification Failure (APWBAD)

Receives control from the SYSPROG password verification routine when the user has failed to provide the correct password in response to the SYSPROG password prompt.

Valid parameters are:

Reg 1 – Address of real AVT

Reg 2 – Not significant

Return codes are not significant.

Parameter on ASTUXBGN|UXENTER macro: APWBAD=label

CNSL Command Input (ACNCMD)

Receives control when the CNSL service is about to enter an MVS system command.

Valid parameters are:

Reg 1 – Address of user service's AVT

Reg 2 – Address of CNSL command buffer formatted as follows:

- LEN – DS H length of command
- LEN – DS H reserved
- CMND – DS OH text of command

Valid return codes are:

0 – Proceed with normal SYSPROG password check

4 – User is authorized to execute this SYSPROG service

Parameter on ASTUXBGN|UXENTER macro: ACNCMD=label

Password Verification Successful (APWGOOD)

Receives control from the SYSPROG password verification routine when the user has provided the correct password in response to the SYSPROG password prompt.

Valid parameters are:

Reg 1 – Address of user service's AVT

Reg 2 – Address of a doubleword that contains the password (in lower case) the user entered.

Parameter on ASTUXBGN|UXENTER macro: APWGOOD=label

Sample User Exit

A sample user exit is supplied in the BBSRC data set. The member name is ASTXA1UE for MVS/XA and ESA systems, and ASTMVSUE for prior systems. This code is supplied only as an example. You may modify it to meet your specific requirements. The sample user exit illustrates the following points:

- An extra work area is acquired upon each entry through the ASTUXBGN|UXENTER macro.

Note: It is addressed by the dummy section, SAVEAREA, which defines the standard save area of 18 fullwords followed by the extra space.

- Common subroutines may be shared (provided they are reentrant) by the various exit subroutines; for example, each exit routine performs the setup subroutine.
- The exit routine may send messages to the SYSPROG session with the SYSPROG ASTWTO macro or to the operator with the MVS WTO macro.
- The user exit runs under the task that called it for the specific condition. Therefore, it will be called by multiple tasks. Furthermore, tasks frequently terminate after performing their function.

Since the operating system automatically frees storage GETMAINed by a task in non shared subpools when the task terminates, shared subpools must be used for storage that will be shared between exit subroutines. Subpool 12 should be used when shared storage is required. SYSPROG does not share subpool 0.

The user exit must make sure that shared storage is freed when it is no longer required to prevent a continuous increase in the size of the subpool throughout the life of the SYSPROG session.

Appendix B. BBUSER Library EXEC Index

This appendix contains an index of user-contributed EXECs. These are examples of IMS management techniques which you can customize to fit your site's needs. After customizing an EXEC, make it a member of BBPROC so that it can be executed.

The index is divided into the following groups:

- | | |
|-----------------|--|
| GROUP 1 | EXECs that manage application resources such as transactions, programs, and databases. |
| GROUP 2 | EXECs that manage network resources. |
| GROUP 3 | EXECs that perform miscellaneous operational procedures. |
| GROUP 4 | EXECs that perform MAINVIEW AutoOPERATOR functions including log maintenance procedures. |
| GROUP 5 | EXECs that react to IMS messages. If the EXEC name is something other than the message ID, it will not be automatically invoked. |
| GROUP 6 | EXECs that respond to timer-driven events. |
| GROUP 7 | EXECs that highlight DSNxxxx messages routed from DB2 to the IMS MTO. |
| GROUP 8 | EXECs that simplify DB2 command entry for the IMS MTO that is also controlling a DB2 subsystem. |
| GROUP 9 | EXECs that list key people to be notified when a problem condition arises. |
| GROUP 10 | EXECs that react to IMS RM and IMS WM messages. |

GROUP 1 - EXECs That Manage Application Resources

Table 7. BBUSER Library Index: Group 1 Manage Application Resources

| Name | Description | Resources |
|----------|---|-----------------------------------|
| @DIS | GENERIC DISPLAY INVOKES %GROUP TXN/PGM/DB | TXN/KPGM/DB |
| DISACC | INVOKES %GROUP TO DISPLAY TXN/PGM/DB ACC | TXN/PGM/DB |
| DISADF | INVOKES %GROUP TO DISPLAY TXN/PGM/DB ADFf | TXN/PGM/DB |
| DISBCA | INVOKES %GROUP TO DISPLAY TXN/PGM/DB BCA | TXN/PGM/DB |
| DISDSS | INVOKES %GROUP TO DISPLAY TXN/PGM/DB DSS | TXN/PGM/DB |
| DISXXX | GENERIC DISPLAY TXN/PGM/DB | TXN/PGM/DB |
| PAYROLL | STARTS PAYROLL APPLICATION AND CHECKS RESOURCES | TXN/PGM/DB |
| GROUP | TESTS FOR VALID DATA AND SETS APPL AND SCOPE IF APPL = ADF INVOKES %GRPADF IF APPL = BCA INVOKES %GRPBCA IF APPL = SAM INVOKES %GRPSAM IF SPECIAL CASE RESETS APPL THEN GOES TO OK IF ALL OK THEN INVOKES %GRPDOIT SETS SCOPE = DB/PGM/TXN/ALL SETS CMD = STA/STO/DBR/DIS/LOC/UNL/PUR/MSG SENDS WARNING MSG IF BAD DATA | SCOPE= TXN PGM DB ALL |
| GRPADF | CMD = OFF SCOPE = DB/PGM/TXN/ALL OFF = DBR/STO | DB/PGM/TXN |
| GRPBCA | CMD = OFFSCOPE = DB/PGM/TXN/ALL OFF = DBR/STO | DB/PGM/TXN |
| GRPDOIT | VALID PARM CK FROM %GROUP INVOKES IF CMD = OFF DBR/STO DB & STO/TXN SENDS WARN MSG IF SCOPE = DONE CHECKS APPL FOR SPECIFIC OR GENERIC DB | DB/TXN |
| GRPSAM | INVOKED BY %GROUP IF APPL = SAM DBR/STO | DB/PGM/TXN |
| PAYROLL | STARTS/STOPS THE PAYROLL APPLICATION | DB/LTERM/TXN |
| PURGTRAN | INVOKES %GROUP TO PURGE ALL REQ'D TXNS | TXN |
| STADSSIN | STARTS ALL DSS TXNS | TXN |
| STADSSUP | STARTS ALL DSS UPDATE TXNS | TXN |
| START | INVOKES %GROUP SCOPE = ALL | DB/PGM/TXN |
| STARTACC | INVOKES %GROUP TO STA ACC(*) | DB/TXN |
| STARTADF | INVOKES %GROUP TO STA ADF(*) THRU %GRPADF | DB/PGM/TXN |
| STARTDSS | INVOKES %GROUP TO STA DSS(*) THRU %GRPDOIT | DB/PGM/TXN |
| STODSSIN | STOPS ALL DSS TXNS WITH NO PARMS PASSED | TXNS |
| STODSSUP | STOPS ALL DSS UPDATE TXNS & SENDS WARN MSG | TXNS |
| STOP | INVOKES %GROUP TO PUR/TXN & OFF /ALL WARNS | DB/PGM/TXN |

Table 7. BBUSER Library Index: Group 1 Manage Application Resources (Continued)

| Name | Description | Resources |
|-------------|---|------------------|
| STOPACC | INVOKES %GROUP TO PUR/TXNS & OFF/ALL THRU %GRPDOIT & SENDS WARN & BROADCAST | DB/TXNS |
| STOPADF | INVOKES %GROUP TO PUR/TXN & OFF/ALL THRU %GRPADF | DB/PGM/TXNS |
| STOPAIM | INVOKES %GROUP TO PUR/TXN & OFF/ALL APPL = AIM & SENDS WARN MSG | DB/TXN |
| STOPBCA | INVOKES %GROUP TO PUR/TXN & OFF/ALL THRU %GRPBCA | DB/PGM/TXN |
| STOPDSS | INVOKES %GROUP TO PUR/TXN & OFF/ALL APPL = DSS | DB/TXNS |
| TESTA | TEST EXEC TO DIS/TRAN PART(*) NO PARMS | TXN |
| TESTB | TEST EXEC TO DIS/TXN = KPART/ADD WITH NO PARMS | TXN |

GROUP 2 - EXECs That Manage Network Resources

Table 8. BBUSER Library Index: Group 2 Manage Network Resources

| Name | Description | Function. |
|--------|-------------------------------|-----------|
| DEQ | START/STOP/DIS/DEQ VTAM NODES | MISC CMDS |
| DSSMFX | ASSIGN LTERM/NODE | ASSIGN |
| RESET | RST/STO/STA/DIS NODE | RESET |

GROUP 3 - EXECs That Perform Miscellaneous Operational Procedures

Table 9. BBUSER Library Index: Group 3 Operational Procedures

| Name | Description | Function |
|----------|---|--------------------------|
| @STO | VERIFY VALID USER OR LTERM FOR STOPPING DATABASE | STO |
| DCMON | ON/OFF | DCMON |
| ISXXX | DISPLAY TXN/PGM/DB | DISPLAY |
| GM1 | GENERIC DATABASE DISPLAY | DISPLAY |
| POSTJOB | EXECUTE A USER-WRITTEN PROGRAM FROM WITHIN EXEC | CALL |
| SENDMSG | SEND A MESSAGE TO AN IMS/VS LTERM FROM AN EXEC | SEND |
| SUBTRAN | SUBMIT TRANSACTIONS TO THE IMS MESSAGE QUEUE | SUBMIT |
| TIME0700 | PROCEDURE TO STA/DB/TXN FOR APPL=MSPH/DSS/AVI ALSO INVOKES %GROUP TO START REMAINDER OF APPLS TO BE STARTED AT 0700 ALSO STO/TXNS THAT CANNOT RUN CONCURRENTLY | STA STO |
| TIME1700 | SENDS WARN MSG PURGING ALL REQUIRED TXNS INVOKES %GROUP TO PUR/TXNS STOPS DSS TXNS INVOKES %GROUP TO OFF/ALL APPLS STOPPED 1700 | MSG PUR STO OFF |
| TIME1702 | REPEAT OF 1700 JUST IN CASE | OFF |
| TUNE0914 | REASSIGNS TXN CLASSES | ASSIGN |
| WARNMF | EXEC SCHEDULES WARNING TO ANOTHER SS | WARN |

GROUP 4 - EXECs That Perform MAINVIEW AutoOPERATOR Functions

Table 10. BBUSER Library Index: Group 4 Perform MAINVIEW AutoOPERATOR Functions

| Name | Description | Function |
|--|---|---------------|
| IM0500W | PARSES WARNING MSG FOR MONITOR SERVICES | WARN/IM0500W |
| IM0501I | DEQUEUE'S IM0500W WARNING MESSAGE | DWARN/IM0501I |
| RMXXXXW WMXXXXW RMXXXXI WMXXXXI | PARSES WARNING MSG FOR MONITOR SERVICES PROTOTYPE FOR AVG RESP BY CLASS & TXN ARRIVALS BY CLASS **NOTE MUST MODIFY FOR OTHER WARNINGS ** **ONLY ONE IM4700W ALLOWED IN LIB ** | WARN/IM4700W |
| IM4701I | DEQUEUE'S IM4700W WARNING MESSAGE | DWARN/IM4701I |

GROUP 5 - EXECs That React to IMS/VS Messages

Table 11. BBUSER Library Index: Group 5 React to IMS/VS Messages

| Name | Description | Message ID |
|----------|--|------------|
| ALLOCATI | ALLOCATION FAILED FOR DB XXXXXX | DFS2503W |
| EDIT | NOW EDITING SLDS VOL | DFS3257I |
| DFS022I | DYNAMIC BACKOUT WAS SUCCESSFUL FOR JOBNAME DYNAMIC BACKOUT WAS NOT SUCCESSFUL FOR JOBNAME | DFS022I |
| DFS0229W | CSA PSB POOL SIZE GT OR EQ TO DLS PSB POOL SIZE | DFS0229W |
| DFS027I | I/O ROUTINE ERROR | DFS027I |
| DFS034I | DATABASE AUTHORIZATION AND LOCKS RELEASED | DFS034I |
| DFS036I | BATCH BACKOUT NOT REQUIRED FOR JOBNAME BATCH BACKOUT IS REQUIRED FOR JOBNAME | DFS036I |
| DFS040I | UNABLE TO ACQUIRE COMMAND LOCK, DATA SHARING DISCONTINUED | DFS040I |
| DFS0404W | INCONSISTENT ACBLIB SPECIFICATION - IMSACBX - CODE=YYY- ZZZ | DFS0404W |
| DFS0451A | DFSXXXXX,DBDNAME,DDNAME,DDDD,EEEE | DFS0451A |
| DFS049I | UNABLE TO OBTAIN STORAGE TO BUILD DATABASE AUTHORIZATION | DFS049I |
| DFS0613I | CTL RGN U113 DUE TO SXXXX UYYYY DURING DL/I CALL IN MPP | DFS0613I |
| DFS0730I | UNABLE TO OPEN/CLOSE DATA SET WITH DDNAME | DFS0730I |
| DFS074I | QUEUE ERROR-MESSAGE CANCELLED | DFS074I |
| DFS0764A | PAGE FIX FOR EXCPVR-REQUIRED AREAS FAILED. REPLY 'RETRY' | DFS0764A |
| DFS0769I | SELECTIVE DISPATCHING | DFS0769I |
| DFS0840I | INDEX ERROR DBNAME STATUS KEY | DFS0840I |
| DFS0845I | XXXXX DATASET LIMIT REACHED, DDNAME=YYYYYYY | DFS0845I |
| DFS086 | CONVERSATIONAL RESOURCES UNAVAILABLE | DFS086 |
| DFS091I | UNABLE TO LOCATE X'42' LOG RECORD | DFS091I |
| DFS096W | DATABASE BUFFERS PURGED, UPDATE INTENT, NOLOG SELECTED | DFS096W |
| DFS124I | CANNOT ENQUEUE LTERM ON LINE | DFS124I |
| DFS140 | HH:MM:SS CHECKPOINT IN PROGRESS, CANNOT PROCESS COMMAND | DFS140 |
| DFS169I | NO STORAGE AVAILABLE FOR DSFRPSTB | DFS169I |
| DFS171A | SECURITY LOAD FAILED RC=AABB | DFS171A |
| DFS194W | DATABASE XXXXXXXXX REFERENCED BY PSB YYYYYYYY IS NOT REGISTERED WITH DBRC | DFS194W |
| DFS2011I | IRLM FAILURE, IMS/VS QUIESICING | DFS2011I |

Table 11. BBUSER Library Index: Group 5 React to IMS/VS Messages (Continued)

| Name | Description | Message ID |
|----------|--|------------|
| DFS2013 | NUMBER OF RECORDS IN QBLKS DATA SET HAS EXCEEDED UPPER THRESHOLD | DFS2013 |
| DFS2014 | NUMBER OF RECORDS IN SMSGQ DATA SET HAS EXCEEDED UPPER THRESHOLD | DFS2014 |
| DFS2015 | NUMBER OF RECORDS IN LMSGQ DATA SET HAS EXCEEDED UPPER THRESHOLD | DFS2015 |
| DFS2020I | VTAM STORAGE ALLOCATION FAILURE RTNCD=8 | DFS2020I |
| DFS2029I | MONITOR UNAVAILABLE | DFS2029I |
| DFS2037I | START DC HAS NOT BEEN COMPLETED | DFS2037I |
| DFS2038I | INSUFFICIENT STORAGE AVAILABLE TO PROCESS COMMAND | DFS2038I |
| DFS2039I | RESOURCES INDICATED EXCEED MAXIMUM LOG BUFFER AVAILABLE | DFS2039I |
| DFS206I | QBLK D/S LIMIT REACHED. MUST REBUILD. | DFS206I |
| DFS207I | SMSG D/S LIMIT REACHED. MUST REBUILD. | DFS207I |
| DFS208I | LMSG D/S LIMIT REACHED. MUST REBUILD. | DFS208I |
| DFS2109I | VTAM ACB NOT OPEN | DFS2109I |
| DFS2110I | NON-QUICK VTAM SHUTDOWN REQUESTED | DFS2110I |
| DFS2112I | UNABLE TO CLOSE VTAM ACB, REG15=RC, ACBERFLG=XX | DFS2112I |
| DFS2136 | REQUIRED RESTART RESPONSE NOT RECEIVED LINK XX | DFS2136 |
| DFS2147I | ACB CLOSE PENDING ON MASTER TERMINALS. | DFS2147I |
| DFS216I | SYSTEM COMMAND FAILURE, NOTIFY SYSTEM PROGRAMMER | DFS216I |
| DFS2161I | LINK XXX STOPPED BY PARTNER | DFS2161I |
| DFS2165I | ROUTING LOOP DETECTED I: SSS/NAME, D: SSS/NAME | DFS2165I |
| DFS2178I | VTAM HAS BEEN CANCELLED | DFS2178I |
| DFS2181I | CANNOT OVERRIDE FORCED COMMAND SECURITY | DFS2181I |
| DFS2202I | PERMANENT I/O ERROR ON IMSMON | DFS2202I |
| DFS2206I | PC MONITOR LOGGING NOT AVAILABLE | DFS2206I |
| DFS2233I | ASSIGNMENT REDUNDANT | DFS2233I |
| DFS2272I | PURGE KEYWORD INVALID, ONLY ONE CTC LINK ALLOWED | DFS2272I |
| DFS2275I | SORT FAILED-INCREASE REGION SIZE | DFS2275I |
| DFS2297 | PURGE KEYWORD IS INVALID, LINK NOT CTC | DFS2297 |
| DFS2298A | BACKOUT PROCESSING INCOMPLETE FOR PSB PSBNAME | DFS2298A |
| DFS234I | INVALID RETURN FROM PAGING | DFS234I |
| DFS2387X | UNABLE TO OPEN SYSOUT DATA SETS | DFS2387X |

Table 11. BBUSER Library Index: Group 5 React to IMS/VS Messages (Continued)

| Name | Description | Message ID |
|----------|---|------------|
| DFS2407I | NUMBER OF IOBS SPECIFIED AT IMS/VS GEN IS TOO SMALL-MINIMUM NUMBER WILL BE USED | DFS2407I |
| DFS2419I | UNABLE TO ROUTE DL/I CALL TRACE OUTPUT TO IMS/VS LOG | DFS2419I |
| DFS2422I | DL/I TRACE TERMINATED-NO OUTPUT DATA SET PROVIDED | DFS2422I |
| DFS2450I | UNABLE TO ACQUIRE STORAGE FOR PI/ENQ POOL | DFS2450I |
| DFS2451W | THE LAST BLOCK OF ENQ/DEQ STORAGE IS BEING ACQUIRED | DFS2451W |
| DFS2466W | IMS NOT DEFINED TO RACF | DFS2466W |
| DFS2470A | /SIGN COMMAND REQUIRED | DFS2470A |
| DFS2474I | RECEIVE ANYS EXHAUSTED, REG0=XX, CLOSING VTAM ACB | DFS2474I |
| DFS2481I | DATABASE RECOVERY CONTROL FEATURE NOT OPERABLE | DFS2481I |
| DFS2483A | DBRC INITIALIZATION ERROR | DFS2483A |
| DFS2484I | JOBNAME=ARXXXXXX GENERATED BY LOG AUTOMATIC ARCHIVING | DFS2484I |
| DFS2505I | ERROR PROCESSING ACBLIB-OPEN ERROR | DFS2505I |
| DFS2519I | ERROR PROCESSING ACBLIB-READ ERROR | DFS2519I |
| DFS2558A | RECFM OF DDNAME=PROCLIB NOT FIXED | DFS2558A |
| DFS2559A | GETMAIN FAILED | DFS2559A |
| DFS271I | UNABLE TO LOAD ERROR MESSAGE OUTPUT DESCRIPTION | DFS271I |
| DFS2854W | JOBNAME, STEPNAME, REGION, REASON--FAILED SECURITY CHECK | DFS2854W |
| DFS299A | SEGMENT EDIT EXIT FAILURE-NOTIFY SYSTEMS PROGRAMMER | DFS299A |
| DFS3127 | I/O ERROR ON RESTART DATA SET | DFS3127 |
| DFS3127I | TYPE ERROR OCCURRED ON THE RESTART DATA SET | DFS3127I |
| DFS3128A | OPEN FAILED ON RESTART DATA SET | DFS3128A |
| DFS3132A | CANNOT BUILDQ. SHUTDOWN WAS FREEZE | DFS3132A |
| DFS3257I | ONLINE LOG NOW OPND/SWTCHD/CLSD/DEALL | DFS3257I |
| DFS3258A | LAST ONLINE LOG DATASET NEEDS ARCHIVE | DFS3258A |
| DFS3260I | ONLINE LOG DATA SET SHORTAGE -- NEED ANOTHER DATA SET | DFS3260I |
| DFS3262I | NO DATA SET AVAILABLE FOR LOG WRITE AHEAD | DFS3262I |
| DFS3263I | ARCHIVE UTILITY ENDED UNSUCCESSFULLY (RRRRRRRR) | DFS3263I |
| DFS3264I | ARCHIVE UNABLE TO OPEN XXXX | DFS3264I |
| DFS3274I | DBRC LOG XXXX EXIT FAILED (YY) | DFS3274I |
| DFS3312I | DBRC INITIALIZATION FAILED -- RC = NN | DFS3312I |
| DFS3411X | UNABLE TO OPEN THE MODSTAT DATA SET | DFS3411X |

Table 11. BBUSER Library Index: Group 5 React to IMS/VS Messages (Continued)

| Name | Description | Message ID |
|----------|--|------------|
| DFS3412X | ERROR READING MODSTAT DATA SET | DFS3412X |
| DFS3413X | INVALID CONTENTS IN THE MODSTAT DATA SET | DFS3413X |
| DFS3414X | NOT ENOUGH STORAGE TO INITIALIZE | DFS3414X |
| DFS3415X | LIBRARY XXXXXXXXX IN USE BY ANOTHER OS/VS TASK | DFS3415X |
| DFS3416X | OPEN FAILED FOR LIBRARY XXXXXXXXX | DFS3416X |
| DFS3417X | UNABLE TO LOCATE MODULE XXXXXXXXX | DFS3417X |
| DFS3418X | UNABLE TO DELETE MODULE XXXXXXXXX | DFS3418X |
| DFS3419X | UNABLE TO LOAD MODULE XXXXXXXX | DFS3419X |
| DFS3420X | RESIDUAL MESSAGES EXIST FOR DELETED TRANSACTIONS | DFS3420X |
| DFS3421X | UNABLE TO FIND XXXX CONTROL BLOCK NAMED YYYYYYYYY | DFS3421X |
| DFS3422X | INSUFFICIENT STORAGE FOR XXXX CONTROL BLOCKS | DFS3422X |
| DFS3435A | UNABLE TO LOCATE OR LOAD MODULE "DFSNNNNS" | DFS3435A |
| DFS3438I | RESERVED INDEX AREA IN MFS BUFFER POOL TOO SMALL | DFS3438I |
| DFS3439W | I/O ERROR READING THE DIRECTORY FOR DDNAME --NNN | DFS3439W |
| DFS3441I | UNABLE TO ACQUIRE STORAGE FOR MODIFY | DFS3441I |
| DFS3446I | INDEX AREA IN MFS BUFF POOL TOO SMALL. NN ENTRIES TRUNC | DFS3446I |
| DFS3447I | UNABLE TO ACQ STG FOR INACT FORMAT LIBRARY DIRECTORIES | DFS3447I |
| DFS3452I | WORK IN PROGRESS FOR RESOURCES TO BE CHG/DEL | DFS3452I |
| DFS3453W | ERROR WRITING MODSTAT DATA SET | DFS3453W |
| DFS3454I | I/O ERROR READING RESIDENT DIRECTORY (\$SIMSDIR) -NNN | DFS3454I |
| DFS3467I | ERROR READING MODSTAT DATA SET | DFS3467I |
| DFS3551 | ERRORS DETECTED. DATABASE RELOAD UNSUCCESSFUL. | DFS3551 |
| DFS406A | INVALID STATE OF SYSTEM DATA SETS REQUIRES BLDQ | DFS406A |
| DFS551 | BATCH REGION XXXXXXXX STARTED ID=NN TIME=TTTT | DFS551 |
| DFS552 | BATCH REGION XXXXXXXX STOPPED ID=NN | DFS552 |
| DFS552I | IFP REGION XXXXXXXX STOPPED. ID=YY TIME=ZZZZ MESSAGE BATCH | DFS552I |
| DFS554 | XXXXXXXX NN STEPNAME PROGNAME(1) TRANCODE NNN,RTCD PSB SMB LTERM XXXXXXXX | DFS554 |
| DFS554A | IMSRGN/TXN/PGM/LTERM ABEND INFO | DFS554A |
| DFS555I | TRAN XXXXXXXX ABEND | DFS555I |
| DFS561I | ERROR READING ACBLIB PSB=PSBNAME/DMB=DMBNAME | DFS561I |
| DFS616I | SYSTEM LOG DATA SET NOT CLOSED-LOG WRITE ERROR | DFS616I |

Table 11. BBUSER Library Index: Group 5 React to IMS/VS Messages (Continued)

| Name | Description | Message ID |
|---------|--|------------|
| DFS810A | IMS/VS READY YYYYDDD/HHMMSS JOBNAME.STEPNAME | DFS810A |
| DFS844I | DFSDVSM0 XXXXXXXXX DATASET FULL DDNAME = DDDDDDDD IMSRGN | DFS844I |
| DFS970I | HH:MM:SS UNEXPECTED STATUS ,NODE XXXXXXXX STUFF | DFS970I |
| DFS972A | *IMS AWAITING MORE INPUT* | DFS972A |
| DFS979I | BATCH MESSAGE PROGRAM XXX WAS ACTIVE AT TIME OF FAILURE | DFS979I |
| DFS980 | BACKOUT COMPLETE FOR PROGRAM XXXXXX | DFS980 |
| DFS981I | PROGRAM PPP AND THE FOLLOWING DATABAZSES HAVE BEEN STOPPED | DFS0981I |
| DFS983I | I/O ERROR IN DATABASE XXX, PROGRAM YYY DURING BACKOUT | DFS983I |
| DFS984I | UNABLE TO OPEN DATABASE XXX, PROGRAM YYY FOR BACKOUT | DFS984I |
| DFS985I | SYSTEM ERROR DURING BACKOUT FOR DB = DDD, PGM = PPP, CODE = X | DFS985I |
| DFS986A | CANNOT OPEN SYSTEM DATA SET-DD NAME-NNN, RC = XX | DFS986A |
| DFS992 | DMB POOL TOO SMALL, UNABLE TO SCHEDULE PSB PSBNAME | DFS992 |
| DFS992I | DMB POOL TOO SMALL, UNABLE TO SCHEDULE PSB PSBNAME | DFS992I |
| DFS993 | PSB POOL TOO SMALL, UNABLE TO SCHEDULE PSBI | DFS993 |
| DFS993I | CSA DLS PSB POOL TOO SMALL, UNABLE TO SCHEDULE PSB PSBNAME | DFS993I |
| DFS994I | CHKPT YYDDD/HHMMSS**VOLSER*****SIMPLE**COLD START | DFS994I |

GROUP 6 - EXECs That Respond to Timer-Driven Events

Table 12. BBUSER Library Index: Group 6 Timer-Driven EXECs

| Name | Description | Function |
|----------|---|---|
| DISA | ISSUES /DIS A COMMAND EVERY 30 MINUTES | /DIS A |
| DRIVER | CONTROLS SCHEDULING OF IMS/VS-RELATED EVENTS DURING A DAY AT 7 AM SEND IMS STARTUP MESSAGE START IMS/VS AT 10 AM QUEUE DATABASE RECOVERY EXEC SEND WARNING MESSAGE AT 10:05 AM QUEUE EXEC TO START DATABASES SEND WARNING MESSAGE AT 3 PM QUEUE DATABASE RECOVERY EXEC SEND WARNING MESSAGE AT 3:05 PM QUEUE EXEC TO START DATABASES | MSG CMD S IMSTEST, AUTO=Y CMD DBRDB1 WARN CMD STADB2 WARN CMD DBRDB2 WARN CMD STADB1 WARN |
| MIDNITE | Q VARIABLES AND COMMANDS PERFORM SCHEDULED JOURNAL AND LOG MAINTENANCE | TIMINIT |
| SUBBMP | STARTS BMP REGION EVERY DAY EXCEPT WEEKENDS AT 6 PM | /STA REG |
| VARDISP | DISPLAYS EXEC VARIABLES IN BBI JOURNAL TO TEST CALLX SERVICE | MSG |
| WKBACKUP | STARTS WEEKLY BACKUP JOB EVERYDAY AT 6 PM EXCEPT FRIDAY | CMD S /MSRDR, MBR=WKBKUP |

GROUP 7 - EXECs That Highlight DSNxxxx Messages

Table 13. BBUSER Library Index: Group 7 Highlight DSN Messages

| .Name | Description |
|----------|---|
| DSNM001I | (XXXX) CONNECTED TO SUBSYSTEM (YYYY) |
| DSNM002I | IMS/VS (XXXX) DISCONNECTED FROM SUBSYSTEM (YYYY) |
| DSNM003I | INFORMS DB2 SYSTEM PROGRAMMER AND OPERATOR IF IMS/VS FAILS TO CONNECT WITH DB2 (RETURN CODE 04 SHOWN). ALSO INFORMS DB2 SYSTEM PROGRAMMER AND DIRECTOR IF RETURN CODE IS '00' |
| DSNM004I | ROUTES MESSAGE TO NOTIFY EXEC WHEN IMS/VS AND DB2 ARE NOT IN SYNCHRONIZATION |
| DSNM005I | RESOLVES INDOUBT SYNCHRONIZATION PROBLEM WITH SUBSYSTEM (XXXX) |

GROUP 8 - EXECs That Simplify DB2 Entry

Table 14. BBUSER Library Index: Group 8 Simplify DB2 Entry

| Name | Description |
|----------|--|
| DB2CMDS | DISPLAYS IMF DB2 COMMANDS THAT MAY BE ISSUED AS EXECs FROM THE COMMAND LINE OF THE MAINVIEW AutoOPERATOR |
| DB2DB | DISPALYS DB2 DATABASES |
| DB2DBA | DISPLAYS DB2 DATABASES THAT ARE ACTIVE |
| DB2DBL | DISPLAYS DB2 DATABASE LOCKS |
| DB2DBR | DISPLAYS DB2 DATABASES ARE RESTRICTED; 'DB RESTRICTED(STOP)' |
| DB2DBU | DISPLAYS DATABASE USE |
| DB2PDB | STOPS A DB2 DATABSE |
| DB2PTRAC | STOPS A DB2 TRACE |
| DB2RBSDS | RE-ESTABLISHES DUAL BOOTSTRAP DATA SETS (NOTE: MUST HAVE BSDS PRIVILEGE) |
| DB2RECIN | RECOVERS INDOUBT ACTION |
| DB2DB | STARTS DB2 DATABASE |
| DB2STRAC | STARTS DB2 TRACE |
| DB2TERMU | TERMINATES DB2 UTILITIES |
| DB2THD | DISPLAYS ALL DB2 THREADS |
| DB2THDA | DISPLAYS DB2 ACTIVE THREADS |
| DB2THDIN | DISPLAYS DB2 THREADS INDOUBT |
| DB2TRACE | DISPLAYS DB2 TRACE |
| DB2UTIL | DISPLAYS DB2 UTILITIES |

GROUP 9 - EXECS That List Key People to Notify about Problems

The name of the EXEC must be equivalent to the name of the person if a person is being notified.

Table 15. BBUSER Library Index: Group 9 Key People Notification

| Name | Description |
|--------|---|
| SMITH1 | SYSTEM PROGRAMMER PHONE AND PAGER NUMBERS |
| SMITH2 | MVS PROGRAMMER PHONE AND PAGER NUMBERS |
| SMITH3 | DB2 SYSTEM PROGRAMMER PHONE AND PAGER NUMBERS |
| SMITH4 | HELP DESK CRISIS MANAGER PHONE AND PAGER NUMBERS |
| SMITH5 | TECHNICAL SERVICES MANAGER PHONE AND PAGER NUMBERS |
| SMITH6 | DATA CENTER DIRECTOR PHONE AND PAGER NUMBERS |
| WEEK1 | PHONE AND PAGER NUMBERS FOR ENTIRE ON-CALL LIST FOR THE WEEK |
| NOTIFY | WARNING MESSAGE CONTAINING MESSAGE TEXT, NAME OF PERON ON-CALL, AND PHONE AND PAGER NUMBERS FOR THAT PERSON |

GROUP 10 - EXECS That React to IMS RM and IMS WM Messages

Table 16. BBUSER Library Index: Group 10 IMS RM and WM Messages

| Name | Message. |
|---------|---|
| RM0010W | IMS-RM/MFSIO: MFS I/O EXCEEDED |
| RM0011I | IMS-RM/MFSIO: MFS I/O OK |
| RM0020W | IMS-RM/MFSIR: MFS IMMEDIATE REQUESTS EXCEEDED |
| RM0021I | IMS-RM/MFSIR: MFS IMMEDIATE REQUESTS NOW OK |
| RM0030W | IMS-RM/MFSFD: % MFS BLOCKS FOUND IN POOL EXCEEDED |
| RM0031I | IMS-RM/MFSFD: % MFS BLOCKS FOUND IN POOL NOW OK |
| RM0040W | IMS-RM/QIO: QUEUE I/O EXCEEDED |
| RM0041I | IMS-RM/QIO: QUEUE I/O NOW OK |
| RM0050W | IMS-RM/QWAIT: QUEUING WAITS EXCEEDED |
| RM0051I | IMS-RM/QWAIT: QUEUING WAITS NOW OK |
| RM0060W | IMS-RM/INQBG: IN-Q LENGTH BY BALG EXCEEDED |
| RM0061I | IMS-RM/INQBG: IN-Q LENGTH BY BALG NOW OK |
| RM0070W | IMS-RM/INQTR: IN-Q LENGTH BY TRANCOD EXCEEDED |
| RM0071I | IMS-RM/INQTR: IN-Q LENGTH BY TRANCOD NOW OK |
| RM0080W | IMS-RM/INQL: IN-Q LENGTH BY CLASS EXCEEDED |
| RM0090W | IMS-RM/IQSCL: SCHEDULABLE IN-Q BY CLASS EXCEEDED |
| RM0091I | IMS-RM/IQSCL: SCHEDULABLE IN-Q BY CLASS NOW OK |
| RM0100W | IMS-RM/OQLT: OUT-Q LENGTH BY LTERM EXCEEDED |
| RM0101I | IMS-RM/OQLT: OUT-Q LENGTH BY LTERM NOW OK |
| RM0110W | IMS-RM/OQLN: OUT-Q LENGTH BY LINE EXCEEDED |
| RM0111I | IMS-RM/OQLN: OUT-Q LENGTH BY LINE NOW OK |
| RM0120W | IMS-RM/OQND: OUT-Q LENGTH BY NODE EXCEEDED |
| RM0121I | IMS-RM/OQND: OUT-Q LENGTH BY NODE NOW OK |
| RM0130W | IMS-RM/OUTLT: MSGS OUTPUT BY LTERM EXCEEDED |
| RM0131I | IMS-RM/OUTLT: MSGS OUTPUT BY LTERM NOW OK |
| RM0140W | IMS-RM/OUTLN: MSGS OUTPUT BY LINE EXCEEDED |
| RM0141I | IMS-RM/OUTLN: MSGS OUTPUT BY LINE NOW OK |
| RM0150W | IMS-RM/OUTND: MSGS OUTPUT BY NODE EXCEEDED |
| RM0151I | IMS-RM/OUTND: MSGS BY NODE NOW OK |

Table 16. BBUSER Library Index: Group 10 IMS RM and WM Messages (Continued)

| Name | Message. |
|-------------|---|
| RM0160W | IMS-RM/ARVBG: TRAN ARRIVALS BY BALG EXCEEDED |
| RM0161I | IMS-RM/ARVBG: TRAN ARRIVALS BY BALG NOW OK |
| RM0170W | IMS-RM/ARVTR: TRAN ARRIVALS BY TRANCODE EXCEEDED |
| RM0171I | IMS-RM/ARVTR: TRAN ARRIVALS BY TRANCODE NOW OK |
| RM0180W | IMS-RM/ARVCL: TRAN ARRIVALS BY CLASS EXCEEDED |
| RM0181I | IMS-RM/ARVCL: TRAN ARRIVALS BY CLASS(PARM) NO LONGER > Y |
| RM0190W | IMS-RM/ARVPR: TRAN ARRIVALS BY PGM EXCEEDED |
| RM191I | IMS-RM/ARVPR: TRAN ARRIVALS BY PGM NOW OK |
| RM0200W | IMS-RM/PRCBG: TRANS PROC'D BY BALG EXCEEDED |
| RM0201I | IMS-RM/PRCBG: TRANS PROC'D BY BALG NOW OK |
| RM0210W | IMS-RM/PRCTR: TRANS PROC'D BY TRANCODE EXCEEDED |
| RM0211I | IMS-RM/PRCTR: TRANS PROC'D BY TRANCODE NOW OK |
| RM0220W | IMS-RM/PRCCL: TRANS PROC'D BY CLASS EXCEEDED |
| RM0221I | IMS-RM/PRCCL: TRANS PROC'D BY CLASS NOW OK |
| RM0230W | IMS-RM/PRCPR: TRANS PROC'D BY PGM EXCEEDED |
| RM0231I | IMS-RM/PRCPR: TRANS PROC'D BY PGM NOW OK |
| RM0240W | IMS-RM/SCHFL: SCHED FAILURES BY TYPE EXCEEDED |
| RM0241I | IMS-RM/SCHFL: SCHED FAILURES BY TYPE NOW OK |
| RM0250W | IMS-RM/MSGT: MESSAGE CALLS PER SCHEDULING BY REGION |
| RM0251I | IMS-RM/MSGT: MESSAGE CALLS PER SCHEDULING NOW OK |
| RM0260W | IMS-RM/MSGGU: MESSAGE CALLS PER MGU BY REGION |
| RM0261I | IMS-RM/MSGGU: MESSAGE CALLS PER MGU NOW OK |
| RM0270W | IMS-RM/DBTOT: DATABASE CALLS PER SCHEDULING BY REGION |
| RM0271I | IMS-RM/DBTOT: DATABASE CALLS PER SCHEDULING REGION NOW OK |
| RM0280W | IMS-RM/DBGU: DATABASE CALLS PER MGU BY REGION |
| RM0281I | IMS-RM/DBGU: DATABASE CALLS PER MGU NOW OK |
| RM0290W | IMS-RM/DBIO: DB I/O COUNT BY SUBPOOL EXCEEDED |
| RM0291I | IMS-RM/DBIO: DB I/O COUNT BY SUBPOOL NOW OK |
| RM0300W | IMS-RM/DBSTL: DB BFR STEALS BY SUBPOOL EXCEEDED |
| RM0301I | IMS-RM/DBSTL: DB BFR STEALS BY SUBPOOL NOW OK |
| RM0310W | IMS-RM/DBSTL: VSAM DB I/O BY SUBPOOL EXCEEDED |

Table 16. BBUSER Library Index: Group 10 IMS RM and WM Messages (Continued)

| Name | Message. |
|-------------|--|
| RM0311I | IMS-RM/VDBIO: VSAM DB I/O BY SUBPOOL NOW OK |
| RM0320W | IMS-RM/VDBWR: VSAM WRITES BY SUBPOOL EXCEEDED |
| RM0321I | IMS-RM/VDBWR: VSAM WRITES BY SUBPOOL NOW OK |
| RM0330W | IMS-RM/DSAP: DYN SAP % UTILIZATION EXCEEDED |
| RM0331I | IMS-RM/DSAP: DYN SAP % UTILIZATION NOW OK |
| RM0340W | IMS-RM/CIOP: CIOP % UTILIZATION EXCEEDED |
| RM0341I | IMS-RM/CIOP: CIOP % UTILIZATION NOW OK |
| RM0350W | IMS-RM/CWAP: CWAP % UTILIZATION EXCEEDED |
| RM0351I | IMS-RM/CWAP: CWAP % UTILIZATION NOW OK |
| RM0360W | IMS-RM/WKAP: WKAP % UTILIZATION EXCEEDED |
| RM0361I | IMS-RM/WKAP: WKAP % UTILIZATION NOW OK |
| RM0370W | IMS-RM/PSBW: PSB WORK POOL % UTIL EXCEEDED |
| RM0371I | IMS-RM/PSBW: PSB WORK POOL % UTIL NOW OK |
| RM0380W | IMS-RM/DBWP: DB WORK POOL % UTIL EXCEEDED |
| RM0381I | IMS-RM/DBWP: DB WORK POOL % UTIL NOW OK |
| RM0390W | IMS-RM/PSBP: PSB POOL % UTILIZATION EXCEEDED |
| RM0391I | IMS-RM/PSBP: PSB POOL % UTILIZATION NOW OK |
| RM0400W | IMS-RM/DMBP: DMB POOL % UTILIZATION EXCEEDED |
| RM0401I | IMS-RM/DMBP: DMB POOL % UTILIZATION NOW OK |
| RM0410W | IMS-RM/HIOP: HIOP POOL % UTILIZATION EXCEEDED |
| RM0411I | IMS-RM/HIOP: HIOP POOL % UTILIZATION NOW OK |
| RM0420W | IMS-RM/RECA: RECA POOL % UTILIZATION EXCEEDED |
| RM0421I | IMS-RM/RECA: RECA POOL % UTILIZATION NOW OK |
| RM0430W | IMS-RM/EPCB: EPCB POOL % UTILIZATION EXCEEDED |
| RM0431I | IMS-RM/EPCB: EPCB POOL % UTILIZATION NOW OK |
| RM0440W | IMS-RM/PAGE: PAGING (REGION EXCEEDED) |
| RM0441I | IMS-RM/PAGE: PAGING (REGION) NOW OK |
| RM0450W | IMS-RM/DPAGE: DEMAND PAGING BY REGION EXCEEDED |
| RM0451I | IMS-RM/DPAGE: DEMAND PAGING BY REGION NOW OK |
| RM0460W | IMS-RM/CSAUT: CSA % UTILIZATION EXCEEDED |
| RM0461I | IMS-RM/CSAUT: CSA % UTILIZATION NOW OK |

Table 16. BBUSER Library Index: Group 10 IMS RM and WM Messages (Continued)

| Name | Message. |
|-------------|---|
| RM0480W | IMS-RM/CSAFR: CSA FRAGMENTATION EXCEEDED |
| RM0481I | IMS-RM/CSAFR: CSA FRAGMENTATION NOW OK |
| RM0500W | IMS-RM/SIO: START I/O'S BY UNIT ADDR EXCEEDED |
| RM0501I | IMS-RM/SIO: START I/O'S BY UNIT ADDR NOW OK |
| RM0510W | IMS-RM/DLIO: DL/1 EXCP COUNT BY DDNAME EXCEEDED |
| RM0511I | IMS-RM/DLIO: DL/1 EXCP COUNT BY DDNAME NOW OK |
| RM0530W | IMS-RM/SYSIO: EXCP COUNT BY DDNAME EXCEEDED |
| RM0531I | IMS-RM/SYSIO: EXCP COUNT BY DDNAME NOW OK |
| RM0550W | IMS-RM/CHBSY: LOGICAL CHANNEL BUSY EXCEEDED |
| RM0551I | IMS-RM/CHBSY: LOGICAL CHANNEL BUSY NOW OK |
| RM0570W | IMS-RM/SHMSG: SHORT MSG QUEUE % UTIL EXCEEDED |
| RM0571I | IMS-RM/SHMSG: SHORT MSG QUEUE % UTIL NOW OK |
| RM0580W | IMS-RM/LGMSG: LONG MSG QUEUE % UTIL EXCEEDED |
| RM0581I | IMS-RM/LGMSG: LONG MSG QUEUE % UTIL NOW OK |
| RM0590W | IMS-RM/QBLKS: QBLKS % UTILIZATION EXCEEDED |
| RM0591I | IMS-RM/QBLKS: QBLKS % UTILIZATION NOW OK |
| RM0600W | IMS-RM/WAIT: REGION IN A LONG PI WAIT |
| RM0601I | IMS-RM/WAIT: REGION IN A LONG PI WAIT NOW OK |
| RM0630W | IMS-RM/PIENQ: PI ENQUEUES BY RGN EXCEEDED |
| RM0631I | IMS-RM/PIENQ: PI ENQUEUES BY RGN NOW OK |
| RM0640W | IMS-RM/PIPL: PI POOL % UTILIZATION EXCEEDED |
| RM0641I | IMS-RM/PIPL: PI POOL % UTILIZATION NOW OK |
| RM0680W | IMS-RM/MFSP: MFS POOL % UTILIZATION EXCEEDED |
| RM0681I | IMS-RM/MFSP: MFS POOL % UTILIZATION NOW OK |
| RM0690W | IMS-RM/D2CON: DB2 CONNECTIONS EXCEEDED |
| RM0691I | IMS-RM/D2CON: DB2 CONNECTIONS NOW OK |
| RM0700W | IMS-RM/D2THD: DB2 ACTIVE THREADS EXCEEDED |
| RM0701I | IMS-RM/D2THD: DB2 ACTIVE THREADS NOW OK |
| WM0040W | IMS-WM/#PROC: TRANS PROCESSED EXCEEDED |
| WM0041I | IMS-WM/#PROC: TRANS PROCESSED NOW OK |
| WM0060W | IMS-WM/#OBAW: OVERFLOW BUFFER WAITS EXCEEDED |

Table 16. BBUSER Library Index: Group 10 IMS RM and WM Messages (Continued)

| Name | Message. |
|-------------|---|
| WM0061I | IMS-WM/#OBAW: OVERFLOW BUFFER WAITS NOW OK |
| WM0070W | IMS-WM/#CIC: CI CONTENTIONS EXCEEDED |
| WM0071I | IMS-WM/#CIC: CI CONTENTIONS NOW OK |
| WM0090W | IMS-WM/#CDB2: DB2 DATABASE CALLS EXCEEDED |
| WM0091I | IMS-WM/#CDB2: DB2 DATABASE CALLS NOW OK |
| WM0100W | IMS-WM/#SDB2: DB2 SPECIAL CALLS EXCEEDED |
| WM0101I | IMS-WM/#SDB2: DB2 SPECIAL CALL NOW OK |
| WM0110W | IMS-WM/\$CTOT: TOTAL PROGRAM CALLS EXCEEDED |
| WM0111I | IMS-WM/\$CTOT: TOTAL PROGRAM CALLS NOW OK |
| WM0120W | IMS-WM/\$CBMP: TOTAL BMP CALLS EXCEEDED |
| WM0121I | IMS-WM/\$CBMP: TOTAL BMP CALLS NOW OK |
| WM0130W | IMS-WM/\$CMPP: TOTAL MPP CALLS EXCEEDED |
| WM0131I | IMS-WM/\$CMPP: TOTAL MPP CALLS NOW OK |

Appendix C. Commonly Asked TapeSHARE Questions and Answers

This appendix contains answers to commonly asked questions regarding TapeSHARE operation. For more information, contact BMC Software Customer Support.

Question: How can users turn off TapeSHARE without stopping the BBI-SS PAS?

Answer: To do this, create an AAOTSPxx member and specify a single partner statement that refers to the BBI-SS PAS. Activate the member using the . RESET BBI control command or through the Dynamic Parameter Manager application. All current tape activity continues without interruption.

For the MAINVIEW AutoOPERATOR running at the 3.1.0 level, you must have PTF BPO3114 applied before you can specify a single partner statement that points to the local BBI-SS PAS.

Question: How can I dedicate specific tape devices to a specific MVS image at a specific time of day?

Answer: To do this:

1. Create an AAOTSPxx member for the partners where the drives will NOT be dedicated and define those drives as NOTAKE.
2. Create an AAOTSPxx member for the partner where the drives will be dedicated and define those drives as NOGIVE.
3. Create a time-initiated Rule that issues the ACTIVATE command and puts these two parameter members in place at the desired times.

When these parameter members are active, TapeSHARE moves the drives over to the partner where they will be dedicated as jobs require them, and the NOTAKE setting disallows the drives from being taken back for as long as the configuration is in place and active.

When you want to return to “share all” mode, the same time-initiated Rule can activate an AAOTSPxx member without the NOGIVE and NOTAKE specifications.

Question: How much additional ECSA is needed for TapeSHARE?

Answer: MAINVIEW AutoOPERATOR needs 3K of ECSA for TapeSHARE.

Question: Since MVS rejects a VARY ONLINE command against a drive that is currently online on another MVS system, why does the TapeSHARE Workstation provide a MULTi command?

Answer: It is possible for 3480, 3490, 3410, and 3420 tape drives to be VARYed ONLINE to more than one MVS system. It can be done at the console when the VARY command is used with the SHARED parameter.

Because a tape drive, which is ONLINE to more than one MVS system, is incompatible with the way TapeSHARE operates, the MULTi command allows you to list any drives that are online to more than one system.

If this situation arises, you should immediately determine which partner should have the device and then issue the OF(f l i ne) line command against the device on the partner that should not have it (refer to Chapter 2, “Controlling Tape Activity from a Single Point with TapeSHARE”).

Question: If a partner in a TapeSHARE Plex is re-IPLed, how can it start with the same drives ONLINE as it had before the IPL?

Answer: MVS controls what drives are ONLINE when MVS image is IPLed. If you notice that some drives are OFFLINE after an IPL, you can use the TapeSHARE Workstation and issue the (ON) LINE command. Then you might want to review the IPL procedure and include these drives in the list containing drives that should be online after an IPL. You can contact IBM for more information.

Question: Can the RETRY count maximum value be increased to more than 10?

Answer: The maximum value for the RETRY count is 10. If there are not enough drives in the TapeSHARE PLEX to satisfy the outstanding allocation requests, 10 RETRYs may not be sufficient for the jobs to receive the needed drives.

Raising the RETRY count to more than 10 can adversely affect the system and cause both MVS ALLOCATION and TapeSHARE not to work as designed.

At times, when there are more tape allocation requests than there are tape drives, maximum tape throughput can be accomplished with the default TapeSHARE RETRYCNT and RETRYINT values by specifying a tape allocation/recover action (either through the ACTION parameter in BBPARM member AAOTSPxx or through the analogous MVS parameter) to HOLD or NOHOLD.

This allows TapeSHARE to function as designed; it switches tape drives as needed when there are drives available on remote partners. When there are no drives available on remote partners, control is returned to MVS ALLOCATION, which attempts to satisfy the outstanding allocation requests with drives on the local partner (whose drives might have become available while TapeSHARE was retrying for devices from the remote partners).

In general (and especially in small TapeSHARE PLEXes), it is not recommended that RETRY count be raised higher than the default (which is 2) or that the retry interval be changed from the default (which is 30 seconds)

Question: Can TapeSHARE coexist with other ALLOCATION exits?

Answer: Yes, TapeSHARE can coexist with other ALLOCATION exits.

Question: If a job requests UNIT=3480 or UNIT=SILO, will TapeSHARE honor the request and attempt to get a 3480 or SILO type device?

Answer: Yes, MVS passes information to TapeSHARE (which includes the specific device type from the job) and TapeSHARE attempts to satisfy the Allocation Request with the specified device type.

Question: If a device does not have a PATH to MVS image, after the PATH is established, TapeSHARE still shows that device with OFFLINE status although the device is ONLINE after activating the PATH. Why doesn't TapeSHARE reflect the new status of the device?

Answer: TapeSHARE does not detect dynamic PATH changes. To display the path change, you can either issue the BBI command:

```
. E TS, VALIDATE
```

or activate the BBPARM member AAOTSPxx with the Dynamic Parameter Manager application. Both actions cause the path status to be refreshed.

You can also automate this procedure by creating a Rule that is triggered by a message ID indicating a PATH change (for example, IEE302I) and the Rule can issue the BBI command

```
. E TS, VALIDATE
```

Question: If a device has to be set to OFFLINE manually (outside of TapeSHARE), how can I be sure that TapeSHARE will not attempt to use this device to satisfy an Allocation Request?

Answer: To be sure that TapeSHARE reacts correctly for a device that has been manually VARYed OFFLINE, BMC Software recommends that you define the device to TapeSHARE as NOGIVE/NOTAKE and issue the OFFLINE command. For example, you can create a Rule that issues the BBI command:

```
. G devnum, NOGIVE, NOTAKE
```

and issues the VARY OFFLINE command.

When this Rule fires, it ensures that TapeSHARE will not be confused if it attempts to GIVE this device at the same time you manually issue the VARY OFFLINE command for the device.

Question: Can TapeSHARE function on MVS SP 4.2 system?

Answer: Yes.

Question: Can TapeSHARE perform Allocation Influencing (for example, specifying a specific device range for specific jobs)?

Answer: TapeSHARE does not have the capabilities to perform Allocation Influencing by itself. However, this can be achieved with another BMC Software MAINVIEW product: PRO/SMS. PRO/SMS version 3.5.1 (and higher), when used in conjunction with TapeSHARE, creates a powerful tool for device management

Question: How can you set TapeSHARE so it does not retry for a specific device type (e.g. 3480)?

Answer: To prevent TapeSHARE from retrying for a specific device type, define all devices of this type as NOTAKE on the local system.

If TapeSHARE on the local system detects a device that can satisfy the Allocation Request and this device is available for taking, it assumes that it can take the device from another partner. In this case, it will RETRY the other partners.

Question: What happens to TapeSHARE when RDS is started?

Answer: If, after IPL, MAINVIEW AutoOPERATOR is started first and RDS becomes active later, the status of the units is not correct. You issue the BBI command:

```
. E TS VALI DATE
```

or

```
. E PARM AAOTSP00
```

to correct the status.

If RDS is bounced, it is normal to see that on the remote system all the units are offline and on the local system all the units are online. When RDS is not active, TapeSHARE is not aware of a device until the . E TS VALI DATE command is issued.

Question: What do I do when I receive an abend S0C1 when trying to use TapeSHARE?

Answer: For MAINVIEW AutoOPERATOR version 3.1, apply APAR zap BAO2955 or BPO3305. For MAINVIEW AutoOPERATOR version 4.1, apply BPO3306.

Question: Is there a command that will GIVE all devices ONLINE from SYSA to SYSB or SYSC?

There is no single command that will GIVE all devices from one system to another, but there are a few ways to accomplish that:

- You can use the TapeSHARE Workstation application to give the devices to another system
- You can invoke an EXEC on the system that issues the . G commands. For example:

```
"IMFEXEC SELECT EXEC(execname)
  TARGET(SYSB) "
```

with a WAIT(YES) or WAIT(NO) specified. The EXEC issues commands in the format:
. G dddd, ONLINE

- You can create two Rules on each system.
 - Create Rule 1 with the following specifications:

```
Rule GIVE (Type CMD):
S1 : Command ID ==> GIVE
A1 : Reject Command ==> YES
    WTO ==> &IMFTEXT *** COMMAND INTERCEPTED BY TAPESHARE
AA : Function ==> ADD
    Key ==> GET&WORD2.&IMFOTIME
    Text ==> GET &WORD2 (requested by &QIMFID on &IMFODATE)
    Queue ==> GET&QIMFID
    Target ==> &WORD3
```

where:

```
S1      Is the primary Selection Criteria panel for event type CMD
A1      Is the primary Action Specification panel for event type CMD
AA      Is the Alert Action(s) panel for event type CMD
```

- Create Rule 2 with the following specifications:

```
Rule GET (Type ALRT):
S1 : Text ID ==> GET
    Queue ==> GET*
A1 : Command (Type MVS) ==> F BBI,.GET &WORD2
```

where:

```
S1      Is the primary Selection Criteria panel for event type ALRT
A1      Is the primary Action Specification panel for event type ALRT
```

Now you can use commands such as GIVE uni taddr ssi d, which cause the Rules to take action.

Question: Why do I still receive the WTOR IEF238D when I specify WAIT/NOWAIT in TapeSHARE?

Answer: This is normal and expected because of the way MVS Allocation works. The sequence of the events that occur if there are no available devices to satisfy the job's requests is:

1. MVS ALLOCATION cannot find a device.
2. Alloc passes control to Dynamic Exit Handler.
3. Dynamic Exit Handler passes control to each exit.
4. No devices could be found and the exit returns to Allocation specifying WAIT/NOHOLD.
5. Allocation issues: "IEF289E waiting for volumes or units" and waits.
6. Allocation wakes up and goes back to step 1.

This entire sequence is repeated for each time specified in the SYS1.PARMLIB member ALLOCxx. The default is 5 times.

When that number is exceeded, MVS Allocation issues the IEF238D WTOR in SYSLOG.

You can find a sample ALLOCxx member in SYS1.SAMPLIB(ALLOC00). For documentation on how to code ALLOCxx, refer to the IBM publication *MVS Initialization and Tuning Guide*.

If you review the SYSLOG for the time of the failure, you can see the IEF289E waiting for volumes or units message being issued. This is a result of the exit telling MVS Allocation to WAIT.

BMC Software recommends that you alter ALLOCxx to indicate a higher value for max-times. In addition, a Rule can be created to automatically respond to the WTOR if it is generated. By watching the fired count of the Rule, you can determine if the number of times specified in ALLOCxx is resolving most of the problems or not.

Appendix D. Making TapeSHARE Work with MVS Allocation More Effectively

TapeSHARE does not alter or replace MVS Allocation processing. It works with MVS Allocation to ensure that the maximum number of tape device allocation requests are satisfied.

The default settings for the TapeSHARE retry and recovery parameters (such as RETRYCNT, RETRYINT, and ACTION) have been calculated to achieve maximum tape-dependent throughput in most installations.

Before you make adjustments to these parameters, you should try to determine that operating TapeSHARE with the default settings does not achieve the desired results.

Important: Only after you have operated with TapeSHARE's default parameters and determined that these default settings do not allow for the desired number of tape device allocation requests to be satisfied does BMC Software recommend that you customize **both**:

- TapeSHARE through the BBPARM member AAOTSPxx member
- MVS Allocation through the SYS1.PARMLIB(ALLOCxx) member

Specifically, BMC Software recommends the following settings:

- Use the TapeSHARE default settings of RETRYCNT=5 and RETRYINT=30 (seconds)

The RETRY parameter processing causes MVS Allocation to single-thread activity so increasing the time between RETRYs or the number of RETRYs can **negatively impact system throughput**.

The default value, which cause TapeSHARE to RETRY five times with a 30-second WAIT between retries, is optimal in most cases and should be altered only after careful consideration.

- Specify ACTION=NOHOLD in BBPARM member AAOTSPxx

This setting tells MVS Allocation to allow the requestor to WAIT (subject to the conditions outlined below) and go through Allocation again (subject to the conditions outlined below) when another device becomes available.

The ACTION=HOLD setting is **not recommended**. When HOLD is specified, MVS Allocation Recovery is single-threaded and no other Allocations will complete recovery processing until this request is satisfied. Use of HOLD should be carefully considered.

The BMC Software suggestion for MVS Allocation customization is that you modify SYS1.PARMLIB(ALLOCxx) to increase the number of retries for MVS Allocation. The default value is 5 and the maximum allowed is 255. Determine and specify the value that best suits your site.

Once you have customized both TapeSHARE and MVS Allocation as outlined above, it is still possible to receive the IEF238D WTOR. This may occur under the following circumstances:

- MVS Allocation will only allow waiting if there are online tape devices that are not allocated to the requesting job.

Therefore, even with a TapeSHARE ACTION=NOHOLD specification, if there are currently no tape devices available on the local partner's system and TapeSHARE fails to GET a device from a remote partner, MVS Allocation will not allow a WAIT (which is implied in NOHOLD) and will take the action defined by the MVS SYS1.PARMLIB(ALLOCxx) POLICYNW parameter in use for that system.

- During normal Allocation processing, MVS will go into Allocation Recovery when it finds no online tape device to satisfy the request.

At that point, TapeSHARE is given control and attempts to GET a device from its partner(s). TapeSHARE retries as many times as is specified in the AAOTSPxx member in use for that system.

If TapeSHARE fails to GET a device, it returns to MVS Allocation with the action specified on the ACTION= parameter in AAOTSPxx for that system. If the action is HOLD or NOHOLD (which both imply a WAIT), and a WAIT is permitted, MVS Allocation will cause the requestor to wait until either MVS Unallocation is driven on that system or a device is varied online.

At that point, the requestor goes through Allocation processing again, and, if it fails to obtain a device, TapeSHARE will be redriven by MVS Allocation. This process is repeated the number of times specified in the MVS SYS1.PARMLIB(ALLOCxx) member in use on this system at that time. The default value is 5. When that value is exceeded, MVS Allocation takes the action defined in SYS1.PARMLIB(ALLOCxx) (where the default action is to issue the IEF238D WTOR).

Finally, BMC Software also recommends that you implement automation to handle the WTOR IEF238D with MAINVIEW AutoOPERATOR Rules to automate those situations when the IEF238D WTOR is issued.

Appendix E. NAIEXEC Command Glossary

The following table summarizes the NetView MAINVIEW AutoOPERATOR EXEC statements.

Table 17. NAIEXEC Command Glossary

| Value | Description. |
|----------------------------------|---|
| Syntax: Example: Function: | NAIEXEC ALERT key 'text' COLOR() ALARM() EXEC() TARGET() ORIGIN() NAIEXEC ALERT CACB 'CICS ACB INACTIVE' EXEC(STCACB) TARGET(CAO1) Generates an ALERT in the associated MAINVIEW AutoOPERATOR. |
| Syntax: Example: Function: | IMFEXEC NETVIEW 'command' WAIT(wsec) JOBNAME(jobname) IMFEXEC NETVIEW 'MAJNODES' WAIT(15) JOBNAME(CNM01) Invokes a NetView CLIST, a REXX EXEC, or a command in this NetView system. |
| Syntax: Example: Function: | NAIEXEC SELECT EXEC[execname p1...pn] TARGET(name) NAIEXEC SELECT EXEC(CHKNET01 RD1217) TARGET(MAO1) Invokes a CLIST in the associated MAINVIEW AutoOPERATOR. |
| Syntax: Example: Function: | NAIEXEC VDEL var TARGET(tgtname) NAIEXEC VDEL (v1 v2 v3...) TARGET(tgtname) NAIEXEC VDEL (TRANSERR STARTERR OPENERR)TARGET(SSA1) Deletes one or more MAINVIEW AutoOPERATOR global variables. |
| Syntax: Example: Function: | NAIEXEC VGET nvvar [FROM(var) TARGET(tgtname)] NAIEXEC VGET QSMFID Retrieves the value of an MAINVIEW AutoOPERATOR global variable and makes it available in the NetView address space. |
| Syntax: Example: Function: | NAIEXEC VPUT varname FROM('var') TARGET(tgtname) NAIEXEC VPUT CICSACB FROM('ACTIVE') Sets an MAINVIEW AutoOPERATOR global variable to a certain value. |

Appendix F. BMC Software Subsystem Services

The BMC Software Subsystem Services (BBXS) are a set of common service routines used by BMC Software products.

Product Applicability

The following BMC Software products use BBXS:

- MAINVIEW AutoOPERATOR for OS/390
- CMF MONITOR
- DASD ADVISOR
- MAINVIEW for IMS Resource Analyzer
- MAINVIEW for IMS Online
- MODEL 300
- MAINVIEW for OS/390
- MAINVIEW SYSPROG Services
- MAINVIEW VistaPoint

This appendix provides an overview of BBXS and describes installing and initializing the subsystem in an MVS system or in an MVS system running under VM. Understanding BBXS functions and initialization procedures is necessary because the subsystem resides in CSA (common service area) memory and can impact your system performance if not installed, initialized, and used properly.

This appendix also lists BBXS error messages and abend codes.

Overview of BBXS

BBXS has three parts:

- A formal MVS subsystem
- Service routines that are dynamically loaded into extended CSA
- Extended CSA memory used for:
 - A control table (BBCT)
 - Subsystem service routines
 - Shared data areas

Note: Some of this storage is page-fixed.

From an external view, BBXS is a proper MVS subsystem. However, unlike subsystems such as JES2 and JES3, BBXS does not require its own address space. BBXS uses only the SSCTSUSE field of the subsystem's CVT or SSCVT to anchor the BMC Software Subsystem Services Control Table (BBCT). The BBCT is built during BBXS initialization, and primarily contains pointers to BBXS service routines. These routines return data in response to specific requests from BMC Software products.

Using BBXS with Multiple BMC Software Products

Since many BMC Software products use BBXS, it is important that they all use the same version of BBXS. This avoids errors that can occur when a down-level version of the CSA-resident components of BBXS attempts to run with a more recent version of the dynamic BBXS components or vice versa. When maintenance is applied to BBXS or a product that requires BBXS, it can affect all products that use BBXS.

Installing BBXS

Installing the subsystem is part of the installation process for any product that requires BBXS. The BBXS FMID, BBBBXnn, where nn is the current BBXS version and release level, is included in the FMID set of every BMC Software product that requires BBXS.

Place all BMC Software product load modules, including the BBXS load modules, in the prefix.BBLINK data set. The BBLINK data set must be APF authorized. If you use BBLINK from either STEPLIB or JOBLIB, all BMC Software products must specify the same data set.

BMC Software recommends that you place the BBLINK data set in the LINKLST library concatenation. Using LINKLST is important, but it is even more important to use only one initialization method and to control it carefully.

Initializing BBXS

BMC Software ships a sample started task procedure for BBXS initialization in the prefix.BBSAMP data set. During customization, the @BBXINIT member is copied to a library you specify and renamed to BBXSINIT. This procedure runs the BBXSINIT program that initializes or reinitializes the BBXS subsystem.

BMC Software recommends that you use the BBXSINIT procedure early in the IPL process or after applying maintenance to BBXS.

Note: Except in places where the @BBXINIT procedure is specifically mentioned, the remainder of this appendix uses the term BBXSINIT interchangeably to refer to both the program and the procedure that executes the program.

Once BBXS is initialized, routines and shared data areas loaded into CSA memory remain there until the next IPL.

The BBXSINIT program, as the name implies, creates new copies of the BBXS modules and data areas in CSA and initializes all ongoing BBXS processes, such as channel and device data collection. Any new product startups or product restarts use the new BBXS code and data areas. CSA used by a previous initialization of BBXS is not released until an IPL occurs.

Do not run the BBXSINIT program as part of another startup procedure. If the other procedure needs to run more than once between IPLs, BBXS is reinitialized and claims more valuable CSA space.

Reinitialization of BBXS is required so that changes to CSA-resident BBXS modules become effective and dynamically loaded modules match the version of the CSA-resident modules.

The reinitialized version of BBXS works with all versions of BMC Software products because BBXS is downwardly compatible.

Note: BMC Software recommends that you recycle all products that use BBXS after the BBXS subsystem is reinitialized so that the new BBXS code is used by all applications.

BBXS is initialized using a different method for each of the following systems:

- An MVS system without the COMMON STORAGE MONITOR component of MAINVIEW for MVS
- An MVS system with the COMMON STORAGE MONITOR component of MAINVIEW for MVS
- An MVS system under VM
- MAINVIEW for MVS contains a component called COMMON STORAGE MONITOR that allows the user to collect data on the allocations and use of common storage (CSA). This component can be activated or not activated. It is recommended that this monitor is started as soon as possible in order to track all CSA allocations directly after IPL.

Initializing BBXS in an MVS System without COMMON STORAGE MONITOR

Before you initialize BBXS in an MVS system without the COMMON STORAGE MONITOR component of MAINVIEW for MVS, you should establish BBXS's MVS subsystem table entry.

The statement shown in Figure 89 creates the MVS subsystem control table (SSCVT) for BBXS but does not initialize BBXS data areas or service modules in CSA.

| | |
|------|---|
| BBXS | <i>Causes MVS to reserve a subsystem ID</i> |
|------|---|

Figure 89. Sample Line of an IEFSSNxx. Member of SYS1.PARMLIB

BMC Software recommends this initialization statement for all sites that do not run the COMMON STORAGE MONITOR component of MainView for MVS as a subsystem. Place this statement first in the IEFSSNxx list to ensure that a product using BBXS can locate the BBCT as soon as possible. It is valuable documentation for other systems programmers to see.

Initializing BBXS in an MVS System with COMMON STORAGE MONITOR

If you start the COMMON STORAGE MONITOR component of MAINVIEW for MVS as a subsystem, BBXS is initialized at the same time.

To define an automatic subsystem start for the COMMON STORAGE MONITOR component of MAINVIEW for MVS and BBXS, modify an active IEFSSNxx member in SYS1.PARMLIB as shown in Figure 90, so that the statement is processed by MVS at IPL time. Place this statement first in the IEFSSNxx list to ensure that a product using BBXS can locate the BBCT as soon as possible.

```
BBXS, BBXCSMON, ' START, ALL, BOTH, ANY'
```

Figure 90. IEFSSNxx Statement for COMMON STORAGE MONITOR and BBXS Initialization

Note: Before the statement shown in Figure 90 can be executed, the prefix.BBLINK data set must be in LINKLST because there is no opportunity to specify a STEPLIB. See the *COMMON STORAGE MONITOR User Guide* for an explanation of the parameters.

Initializing BBXS in an MVS System under VM

When your MVS is a VM guest:

- BBXS cannot collect data about I/O queuing
- BBXS's ability to gather I/O configuration data may be limited

Without this information, some product functions are limited. Depending on your VM configuration, BBXS can be initialized to collect the I/O usage and configuration data, but only under certain circumstances.

If you run your MVS under VM in a non-ESCON environment, BBXS is unable to identify which IOCDS to use. To provide the IOCDS information, you must initialize BBXS by executing the BBXSINIT program with the IOCDSRES parameter. BBXS uses the IOCP data from your local IOCDS generation process to build the data areas in CSA that contain channel and device data.

The IOCDS= Parameter: The IOCDSRES parameter identifies the resident IOCDS ID that BBXS will use during initialization. It has values Ax or Bx, where x is a number that may be as high as 7, depending upon your processor. The number refers to the IOCDS within the Processor Controller File. You must obtain and use the correct IOCDS ID. There may be separate IOCDSs for each LPAR in your system.

Note: BMC Software recommends that you contact the person responsible for IOCDS generations at your site to obtain the current IOCDS ID and notify that person that the IOCDSRES parameter in BBXSINIT must be kept up to date with any changes made to the IOCDS.

BMC Software recommends that you define the BBXSINIT program, using the IOCDSRES parameter, as an automatically started procedure so that you can provide the location of the IOCDS data.

You can make MVS automatically start BBXS initialization in an MVS system running under VM by defining the sample statement, shown in Figure 91, within a COMMNDxx member of SYS1.PARMLIB.

| | |
|------------------------------|---|
| COM= ' S BBXSINIT, IOCDS=Ax' | <i>Initialize BBXS for MVS under VM</i> |
|------------------------------|---|

Figure 91. COMMNDxx Statement for BBXS Initialization in an MVS System under VM

Note: This statement assumes that you renamed the sample @BBXINIT procedure to BBXSINIT when you copied @BBXINIT from the BBSAMP data set to your SYS1.PROCLIB data set during customization.

Caution

If the IOCDSRES parameter is not supplied when BBXS is initialized, BBXS issues a WTOR message, BBX017A, prompting you for the IOCDS data set ID. It is easy to miss this message and, if no response is made, BBXS continues without the I/O configuration data.

VM Systems with ESCON: Although you must run the BBXSINIT procedure to initialize BBXS, VM systems with ESCON capabilities do not allow the retrieval of the configuration data by the BBXSINIT program, unless MVS is running under VM/ESA. To provide retrieval of I/O configuration data for VM/ESA systems with ESCON capabilities, you must specify RMCHINFO on the VM directory options statement. The RMCHINFO parameter tells VM/ESA that it should allow the guest MVS to request channel and I/O configuration data.

Part 7. Glossary and Index

This section contains a glossary of terms and an index.

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Glossary

This glossary defines BMC Software terminology. Other dictionaries and glossaries can be used in conjunction with this glossary.

Since this glossary pertains to BMC Software-related products, some of the terms defined might not appear in this book.

To help you find the information you need, this glossary uses the following cross-references:

| | |
|----------------------|--|
| Contrast with | Indicates a term that has a contrary or contradictory meaning. |
| See | Indicates an entry that is a synonym or contains expanded information. |
| See also | Indicates an entry that contains related information. |

A

action. Defined operation, such as modifying a MAINVIEW window, that is performed in response to a command. *See* object.

active window. Any MAINVIEW window in which data can be refreshed. *See* alternate window, current window, window.

administrative view. Display from which a product's management tasks are performed, such as the DSLIST view for managing historical data sets. *See* view.

ALT WIN field. Input field that allows you to specify the window identifier for an alternate window where the results of a hyperlink are displayed. *See* alternate window.

Alternate Access. *See* MAINVIEW Alternate Access.

alternate form. View requested through the FORM command that changes the format of a previously displayed view to show related information. *See also* form, query.

alternate window. (1) Window that is specifically selected to display the results of a hyperlink. (2) Window whose identifier is defined to the ALT WIN field. *Contrast with* current window. *See* active window, window, ALT WIN field.

analyzer. (1) Online display that presents a snapshot of status and activity data and indicates problem areas. (2) Component of CMF MONITOR. *See* CMF MONITOR Analyzer.

application. (1) Program that performs a specific set of tasks within a MAINVIEW product. (2) In MAINVIEW VistaPoint, combination of workloads to enable display of their transaction performance data in a single view.

application trace. *See* trace.

ASCH workload. Workload comprising Advanced Program-to-Program Communication (APPC) address spaces.

AutoCustomization. Online facility for customizing the installation of products. AutoCustomization provides an ISPF panel interface that both presents customization steps in sequence and provides current status information about the progress of the installation.

automatic screen update. Usage mode wherein the currently displayed screen is refreshed automatically with new data at an interval you specify. Invoked by the ASU command.

B

batch workload. Workload consisting of address spaces running batch jobs.

BBI. Basic architecture that distributes work between workstations and multiple OS/390 targets for BMC Software MAINVIEW products.

BBI-SS PAS. *See* BBI subsystem product address space.

BBI subsystem product address space (BBI-SS PAS). OS/390 subsystem address space that manages communication between local and remote systems and that contains one or more of the following products:

- Command MQ for S/390
- MAINVIEW AutoOPERATOR
- MAINVIEW for CICS
- MAINVIEW for DB2
- MAINVIEW for DBCTL
- MAINVIEW for IMS Online
- MAINVIEW for MQSeries
- MAINVIEW SRM
- MAINVIEW VistaPoint (for CICS, DB2, DBCTL, and IMS workloads)

BBPARM. *See* parameter library.

BBPROC. *See* procedure library.

BBPROF. *See* profile library.

BBSAMP. *See* sample library.

BBV. *See* MAINVIEW Alternate Access.

BBXS. BMC Software Subsystem Services. Common set of service routines loaded into common storage and used by several BMC Software MAINVIEW products.

border. Visual indication of the boundaries of a window.

bottleneck analysis. Process of determining which resources have insufficient capacity to provide acceptable service levels and that therefore can cause performance problems.

C

CA-Disk. Data management system by Computer Associates that replaced the DMS product.

CAS. Coordinating address space. One of the address spaces used by the MAINVIEW windows environment architecture. The CAS supplies common services and enables communication between linked systems. Each OS/390 or z/OS image requires a separate CAS. Cross-system communication is established through the CAS using VTAM and XCF communication links.

CFMON. *See* coupling facility monitoring.

chart. Display format for graphical data. *See also* graph.

CICSplex. User-defined set of one or more CICS systems that are controlled and managed as a single functional entity.

CMF MONITOR. Comprehensive Management Facility MONITOR. Product that measures and reports on all critical system resources, such as CPU, channel, and device usage; memory, paging, and swapping activity; and workload performance.

CMF MONITOR Analyzer. Batch component of CMF MONITOR that reads the SMF user and 70 series records created by the CMF MONITOR Extractor and/or the RMF Extractor and formats them into printed system performance reports.

CMF MONITOR Extractor. Component of CMF that collects performance statistics for CMF MONITOR Analyzer, CMF MONITOR Online, MAINVIEW for OS/390, and RMF postprocessor. *See* CMF MONITOR Analyzer, CMF MONITOR Online, MAINVIEW for OS/390.

CMF MONITOR Online. Component of CMF that uses the MAINVIEW window interface to present data on all address spaces, their use of various system resources, and the delays that each address space incurs while waiting for access to these resources. *See* CMF MONITOR, MAINVIEW for OS/390.

CMF Type 79 API. Application programming interface, provided by CMF, that provides access to MAINVIEW SMF-type 79 records.

CMFMON. Component of CMF MONITOR that simplifies online retrieval of information about system hardware and application performance and creates MAINVIEW SMF-type 79 records.

The CMFMON *online facility* can be used to view data in one or more formatted screens.

The CMFMON *write facility* can be used to write collected data as MAINVIEW SMF-type 79 records to an SMF or sequential data set.

CMRDETL. MAINVIEW for CICS data set that stores detail transaction records (type 6E) and abend records (type 6D). Detail records are logged for each successful transaction. Abend records are written when an abend occurs. Both records have the same format when stored on CMRDETL.

CMRSTATS. MAINVIEW for CICS data set that stores both CICS operational statistic records, at five-minute intervals, and other records, at intervals defined by parameters specified during customization (using CMRSOPT).

column. Vertical component of a view or display, typically containing fields of the same type of information, that varies by the objects associated in each row.

collection interval. Length of time data is collected. *See also* delta mode, total mode.

command delimiter. Special character, usually a ; (semicolon), used to stack commands typed concurrently on the COMMAND line for sequential execution.

COMMAND line. Line in the control area of the display screen where primary commands can be typed. *Contrast with* line command column.

Command MQ Automation D/S. Command MQ agents, which provide local proactive monitoring for both MQSeries and MSMQ (Microsoft message queue manager). The Command MQ agents operate at the local node level where they continue to perform functions regardless of the availability of the MQM (message queue manager) network. Functionality includes automatic monitoring and restarts of channels, queue managers, queues and command servers. In cases where automated recovery is not possible, the agents transport critical alert information to a central console.

Command MQ Automation S/390. Command MQ component, which monitors the MQM (message queue manager) networks and intercedes to perform corrective actions when problems arise. Solutions include:

- Dead-Letter Queue management
- System Queue Archival
- Service Interval Performance solutions
- Channel Availability

These solutions help ensure immediate relief to some of the most pressing MQM operations and performance problems.

Command MQ for D/S. Command MQ for D/S utilizes a true client/server architecture and employs resident agents to provide configuration, administration, performance monitoring and operations management for the MQM (message queue manager) network.

Command MQ for S/390. See MAINVIEW for MQSeries.

COMMON STORAGE MONITOR. Component of MAINVIEW for OS/390 that monitors usage and reconfigures OS/390 or z/OS common storage blocks.

composite workload. Workload made up of a WLM workload or other workloads, which are called *constituent workloads*.

constituent workload. Member of a composite workload. Constituent workloads in a composite usually belong to a single workload class, but sometimes are mixed.

contention. Occurs when there are more requests for service than there are servers available.

context. In a Plex Manager view, field that contains the name of a target or group of targets specified with the CONTEXT command. See scope, service point, SSI context, target context.

CONTEXT command. Specifies either a MAINVIEW product and a specific target for that product (see target context) or a MAINVIEW product and a name representing one or more targets (see *SSI context*) for that product.

control statement. (1) Statement that interrupts a sequence of instructions and transfers control to another part of the program. (2) Statement that names samplers and other parameters that configure the MAINVIEW components to perform specified functions. (3) In CMF MONITOR, statement in a parameter library member used to identify a sampler in the extractor or a report in the analyzer, or to describe either component's processing requirements to the operating system.

coupling facility monitoring (CFMON). Coupling facility views that monitor the activity of your system's coupling facilities.

current data. Data that reflects the system in its current state. The two types of current data are realtime data and interval data. *Contrast with* historical data. See also interval data and realtime data.

current window. In the MAINVIEW window environment, window where the main dialog with the application takes place. The current window is used as the default window destination for commands issued on the COMMAND line when no window number is specified. *Contrast with* alternate window. See active window, window.

D

DASD. Direct Access Storage Device. (1) A device with rotating recording surfaces that provides immediate access to stored data. (2) Any device that responds to a DASD program.

data collector. Program that belongs to a MAINVIEW product and that collects data from various sources and stores the data in records used by views. For example, MAINVIEW for OS/390 data collectors obtain data from OS/390 or z/OS services, OS/390 or z/OS control blocks, CMF MONITOR

Extractor control blocks, and other sources. *Contrast with* extractor.

delta mode. (1) In MAINVIEW for DB2 analyzer displays, difference between the value sampled at the start of the current statistics interval and the value sampled by the current analyzer request. See also *statistics interval*. (2) In CMFMON, usage mode wherein certain columns of data reflect the difference in values between one sample cycle and the next. Invoked by the DELTA ON command. See also collection interval, sample cycle, total mode.

DFSMS. Data Facility Storage Management System. Data management, backup, and HSM software from IBM for OS/390 or z/OS mainframes.

DMR. See MAINVIEW for DB2.

DMS. Data Management System. See CA-Disk.

DMS2HSM. See MAINVIEW SRM DMS2HSM.

DSO. Data Set Optimizer. CMF MONITOR Extractor component that uses CMF MONITOR Extractor data to produce reports specifying the optimal ordering of data sets on moveable head devices.

E

EasyHSM. See MAINVIEW SRM EasyHSM.

EasyPOOL. See MAINVIEW SRM EasyPOOL.

EasySMS. See MAINVIEW SRM EasySMS.

element. (1) Data component of a data collector record, shown in a view as a field. (2) Internal value of a field in a view, used in product functions.

element help. Online help for a field in a view. The preferred term is *field help*.

Enterprise Storage Automation. See MAINVIEW SRM Enterprise Storage Automation.

event. A message issued by Enterprise Storage Automation. User-defined storage occurrences generate events in the form of messages. These events provide an early warning system for storage problems and are routed to user-specified destinations for central viewing and management.

Event Collector. Component for MAINVIEW for IMS Online, MAINVIEW for IMS Offline, and MAINVIEW for DBCTL that collects data about events in the IMS environment. This data is required for Workload Monitor and optional for Workload Analyzer (except for the workload trace service). This data also is recorded as transaction records (X'FA') and program records (X'F9') on the IMS system log for later use by the MAINVIEW for IMS Offline components: Performance Reporter and Transaction Accountant.

expand. Predefined link from one display to a related display. See also hyperlink.

extractor. Program that collects data from various sources and keeps the data control blocks to be written as records. Extractors obtain data from services, control blocks, and other sources. *Contrast with* data collector.

extractor interval. *See* collection interval.

F

fast path. Predefined link between one screen and another. To use the fast path, place the cursor on a single value in a field and press Enter. The resulting screen displays more detailed information about the selected value. *See also* hyperlink.

field. Group of character positions within a screen or report used to type or display specific information.

field help. Online help describing the purpose or contents of a field on a screen. To display field help, place the cursor anywhere in a field and press PF1 (HELP). In some products, field help is accessible from the screen help that is displayed when you press PF1.

filter. Selection criteria used to limit the number of rows displayed in a view. Data that does not meet the selection criteria is not displayed. A filter is composed of an element, an operator, and an operand (a number or character string). Filters can be implemented in view customization, through the PARM/QPARM commands, or through the Where/QWhere commands. Filters are established against elements of data.

fire. The term used to indicate that an event has triggered an action. In MAINVIEW AutoOPERATOR, when a rule selection criteria matches an incoming event and *fires*, the user-specified automation actions are performed. This process is also called *handling* the event.

fixed field. Field that remains stationary at the left margin of a screen that is scrolled either right or left.

FOCAL POINT. MAINVIEW product that displays a summary of key performance indicators across systems, sites, and applications from a single terminal.

form. One of two constituent parts of a view; the other is query. A form defines how the data is presented; a query identifies the data required for the view. *See also* query, view.

full-screen mode. Display of a MAINVIEW product application or service on the entire screen. There is no window information line. *Contrast with* windows mode.

G

global command. Any MAINVIEW window interface command that can affect all windows in the window area of a MAINVIEW display.

graph. Graphical display of data that you select from a MAINVIEW window environment view. *See also* chart.

H

hilevel. For MAINVIEW products, high-level data set qualifier required by a site's naming conventions.

historical data. (1) Data that reflects the system as it existed at the end of a past recording interval or the duration of several intervals. (2) Any data stored in the historical database and retrieved using the TIME command. *Contrast with* current data, interval data and realtime data.

historical database. Collection of performance data written at the end of each installation-defined recording interval and containing up to 100 VSAM clusters. Data is extracted from the historical database with the TIME command. *See* historical data.

historical data set. In MAINVIEW products that display historical data, VSAM cluster file in which data is recorded at regular intervals.

HSM. (Hierarchical Storage Management) Automatic movement of files from hard disk to slower, less-expensive storage media. The typical hierarchy is from magnetic disk to optical disk to tape.

hyperlink. (1) Preset field in a view or an EXPAND line on a display that permits you to

- Access cursor-sensitive help
- Issue commands
- Link to another view or display

The transfer can be either within a single product or to a related display/view in a different BMC Software product. Generally, hyperlinked fields are highlighted. (2) Cursor-activated short path from a topic or term in online help to related information. *See also* fast path.

I

Image log. Collection of screen-display records. Image logs can be created for both the BBI-SS PAS and the BBI terminal session (TS).

The BBI-SS PAS Image log consists of two data sets that are used alternately: as one fills up, the other is used. Logging to the BBI-SS PAS Image log stops when both data sets are filled and the first data set is not processed by the archive program.

The TS Image log is a single data set that wraps around when full.

IMSplex System Manager (IPSM). MVIMS Online and MVDBC service that provides Single System Image views of resources and bottlenecks for applications across one or more IMS regions and systems.

interval data. Cumulative data collected during a collection interval. Intervals usually last from 15 to 30 minutes depending on how the recording interval is specified during product customization. *Contrast with* historical data.

Note: If change is made to the workloads, a new interval will be started.

See also current data and realtime data.

InTune. Product for improving application program performance. It monitors the program and provides information used to reduce bottlenecks and delays.

IRUF. IMS Resource Utilization File (IRUF). IRUFs can be either detail (one event, one record) or summarized (more than one event, one record). A detail IRUF is created by processing the IMS system log through a program called IMFLEDIT. A summarized IRUF is created by processing one or more detail IRUFs, one or more summarized IRUFs, or a combination of both, through a sort program and the TASCOSTR program.

J

job activity view. Report about address space consumption of resources. *See* view.

journal. Special-purpose data set that stores the chronological records of operator and system actions.

Journal log. Collection of messages. Journal logs are created for both the BBI-SS PAS and the BBI terminal session (TS).

The BBI-SS PAS Journal log consists of two data sets that are used alternately: as one fills up, the other is used. Logging to the BBI-SS PAS Journal log stops when both data sets are filled and the first data set is not being processed by the archive program.

The TS Journal log is a single data set that wraps around when full.

L

line command. Command that you type in the line command column in a view or display. Line commands initiate actions that apply to the data displayed in that particular row.

line command column. Command input column on the left side of a view or display. *Contrast with* COMMAND line.

Log Edit. In the MAINVIEW for IMS Offline program named IMFLEDIT, function that extracts transaction (X'FA') and program (X'F9') records from the IMS system log. IMFLEDIT also extracts certain records that were recorded on the system log by IMS. IMFLEDIT then formats the records into a file called the IMS Resource Utilization File (IRUF).

M

MAINVIEW. BMC Software integrated systems management architecture.

MAINVIEW Alarm Manager. In conjunction with other MAINVIEW products, notifies you when an exception condition occurs. MAINVIEW Alarm Manager is capable of monitoring multiple systems simultaneously, which means that MAINVIEW Alarm Manager installed on one system keeps track of your entire sysplex. You can then display a single view that show exceptions for all MAINVIEW performance monitors within your OS/390 or z/OS enterprise.

MAINVIEW Alternate Access. Enables MAINVIEW products to be used without TSO by providing access through EXCP and VTAM interfaces.

MAINVIEW Application Program Interface. REXX- or CLIST-based, callable interface that allows MAINVIEW AutoOPERATOR EXECs to access MAINVIEW monitor product view data.

MAINVIEW AutoOPERATOR. Product that uses tools, techniques, and facilities to automate routine operator tasks and provide online performance monitoring, and that achieves high availability through error minimization, improved productivity, and problem prediction and prevention.

MAINVIEW control area. In the MAINVIEW window environment, first three lines at the top of the view containing the window information line and the COMMAND, SCROLL, CURR WIN, and ALT WIN lines. The control area cannot be customized and is part of the information display. *Contrast with* MAINVIEW display area, MAINVIEW window area.

MAINVIEW display area. *See* MAINVIEW window area.

MAINVIEW Explorer. Product that provides access to MAINVIEW products from a Web browser running under Windows. MAINVIEW Explorer replaces MAINVIEW Desktop.

MAINVIEW for CICS. Product (formerly MV MANAGER for CICS) that provides realtime application performance analysis and monitoring for CICS system management.

MAINVIEW for DB2. Product (formerly MV MANAGER for DB2) that provides realtime and historical application performance analysis and monitoring for DB2 subsystem management.

MAINVIEW for DBCTL. Product (formerly MV MANAGER for DBCTL) that provides realtime application performance analysis and monitoring for DBCTL management.

MAINVIEW for IMS (MVIMS) Offline. Product with a Performance Reporter component that organizes data and prints reports used to analyze IMS performance and a Transaction Accountant component that produces cost accounting and user charge-back records and reports.

MAINVIEW for IMS (MVIMS) Online. Product that provides realtime application performance analysis and monitoring for IMS management.

MAINVIEW for IP. Product that monitors OS/390 and z/OS mission-critical application performance as it relates to TCP/IP stack usage. Collected data includes availability, connections, response times, routers, service levels, storage, traffic, Web cache, and so on.

MAINVIEW for Linux-Servers. Product that allows you to monitor the performance of your Linux systems from the MAINVIEW windows interface.

MAINVIEW for MQSeries. Delivers comprehensive capabilities for configuration, administration, performance monitoring and operations management for an entire MQM (message queue manager) network.

MAINVIEW for OS/390. System management application (known as MAINVIEW for MVS prior to version 2.5). Built upon the MAINVIEW window environment architecture, it uses the window interface to provide access to system performance data and other functions necessary in the overall management of an enterprise.

MAINVIEW for UNIX System Services. System management application that allows you to monitor the performance of the UNIX System Services from a MAINVIEW window interface.

MAINVIEW for VTAM. Product that displays application performance data by application, transaction ID, and LU name. This collected data includes: connections, response time statistics, application availability, and application throughput.

MAINVIEW for WebSphere. Product that provides Web monitoring and management for applications integrated with IBM WebSphere Application Server for OS/390 or z/OS.

MAINVIEW Selection Menu. ISPF selection panel that provides access to all MAINVIEW windows-mode and full-screen mode products.

MAINVIEW SRM. *See* MAINVIEW Storage Resource Manager (SRM).

MAINVIEW SRM DMS2HSM. Product that facilitates the conversion of CA-Disk, formerly known as DMS, to HSM.

MAINVIEW SRM EasyHSM. Product that provides online monitoring and reporting to help storage managers use DFHSM efficiently.

MAINVIEW SRM EasyPOOL. Product that provides control over data set allocation and enforcement of allocation and naming standards. EasyPOOL functions operate at the operating system level to intercept normal job processing, thus providing services without any JCL changes.

MAINVIEW SRM EasySMS. Product that provides tools that aid in the conversion to DFSMS and provides enhancement to the DFSMS environment after implementation. EasySMS consists of the EasyACS functions, the SMSACSTE function, and the Monitoring and Positioning Facility.

MAINVIEW SRM Enterprise Storage Automation. Product that delivers powerful event generation and storage automation technology across the storage enterprise. Used in conjunction with MAINVIEW AutoOPERATOR, automated solutions to perform pool, volume, application, or data set-level manipulation can be created and used in response to any condition or invoked to perform ad hoc requests

MAINVIEW SRM SG-Auto. Product that provides early warning notification of storage anomalies and automated responses to those anomalies based on conditions in the storage subsystem.

MAINVIEW SRM SG-Control. Product that provides real-time monitoring, budgeting, and control of DASD space utilization.

MAINVIEW SRM StopX37/II. Product that provides enhancements to OS/390 or z/OS space management, reducing the incidence of space-related processing problems. The StopX37/II functions operate at the system level to intercept abend conditions or standards violations, thus providing services without any JCL changes.

MAINVIEW SRM StorageGUARD. Product that monitors and reports on DASD consumption and provides historical views to help control current and future DASD usage.

MAINVIEW Storage Resource Manager (SRM). Suite of products that assists in all phases of OS/390 or z/OS storage management. MAINVIEW SRM consists of products that perform automation, reporting, trend analysis, and error correction for storage management.

MAINVIEW SYSPROG Services. *See* SYSPROG Services.

MAINVIEW VistaPoint. Product that provides enterprise-wide views of performance. Application and workload views are available for CICS, DB2, DBCTL, IMS, and OS/390. Data is summarized at the level of detail needed; for example, views can be for a single target, an OS/390 or z/OS image, or an entire enterprise.

MAINVIEW window area. Portion of the information display that is not the control area and in which views are displayed and windows opened. It includes all but the first three lines of the information display. *Contrast with* MAINVIEW control area.

monitor. Online service that measures resources or workloads at user-defined intervals and issues warnings when user-defined thresholds are exceeded.

Multi-Level Automation (MLA). The user-defined, multiple step process in Enterprise Storage Automation that implements solutions in a tiered approach, where solutions are invoked one after another until the condition is resolved.

MVALARM. *See* MAINVIEW Alarm Manager.

MVAPI. *See* MAINVIEW Application Program Interface.

MVCICS. *See* MAINVIEW for CICS.

MVDB2. *See* MAINVIEW for DB2.

MVDBC. *See* MAINVIEW for DBCTL.

MVIMS. *See* MAINVIEW for IMS.

MVIP. *See* MAINVIEW for IP.

MVLNX. *See* MAINVIEW for Linux-Servers.

MVMQ. *See* MAINVIEW for MQSeries.

MVMVS. *See* MAINVIEW for OS/390.

MVScope. MAINVIEW for OS/390 application that traces both CPU usage down to the CSECT level and I/O usage down to the channel program level.

MVSRM. *See* MAINVIEW Storage Resource Manager (SRM).

MVSRMHSM. *See* MAINVIEW SRM EasyHSM.

MVSRMSGC. *See* MAINVIEW SRM SG-Control.

MVSRMSGD. *See* MAINVIEW SRM StorageGUARD.

MVSRMSGP. *See* MAINVIEW SRM StorageGUARD.

MVVP. *See* MAINVIEW VistaPoint.

MVVTAM. *See* MAINVIEW for VTAM.

MVWEB. *See* MAINVIEW for WebSphere.

N

nested help. Multiple layers of help pop-up windows. Each successive layer is accessed by clicking a hyperlink from the previous layer.

O

object. Anything you can manipulate as a single unit. MAINVIEW objects can be any of the following: product, secondary window, view, row, column, or field.

You can issue an action against an object by issuing a line command in the line command column to the left of the object. *See* action.

OMVS workload. Workload consisting of OS/390 OpenEdition address spaces.

online help. Help information that is accessible online.

OS/390 and z/OS Installer. BMC Software common installation system for mainframe products.

OS/390 product address space (PAS). Address space containing OS/390 or z/OS data collectors, including the CMF MONITOR Extractor. Used by the MAINVIEW for OS/390, MAINVIEW for Unix System Services, and CMF MONITOR products. *See* PAS.

P

parameter library. Data set consisting of members that contain parameters for specific MAINVIEW products or a support component. There can be several versions:

- The distributed parameter library, called BBPARAM
- A site-specific parameter library or libraries

These can be

- A library created by AutoCustomization, called UBBPARAM
- A library created manually, with a unique name

PAS. Product address space. Used by the MAINVIEW products. Contains data collectors and other product functions. *See* OS/390 product address space (PAS), BBI subsystem product address space (BBI-SS PAS).

performance group workload. Collection of address spaced defined to OS/390 or z/OS. If you are running OS/390 or z/OS with WLM in compatibility mode, MAINVIEW for OS/390 creates a performance group workload instead of a service class. *See* service class workload, workload definition.

PERFORMANCE MANAGER. MAINVIEW for CICS online service for monitoring and managing current performance of CICS regions.

Performance Reporter (MVIMS Offline). MVIMS Offline component that organizes data and prints reports that can be used to analyze IMS performance.

Performance Reporter. Product component that generates offline batch reports. The following products can generate these reports:

- MAINVIEW for DB2
- MAINVIEW for CICS

Plex Manager. Product through which cross-system communication, MAINVIEW security, and an SSI context are established and controlled. Plex Manager is shipped with MAINVIEW window environment products as part of the coordinating address space (CAS) and is accessible as a menu option from the MAINVIEW Selection Menu.

PRGP workload. In MVS/SP 5.0 or earlier, or in compatibility mode in MVS/SP 5.1 or later, composite of service classes. MAINVIEW for OS/390 creates a performance group workload for each performance group defined in the current IEAIPS.xx member.

procedure library. Data set consisting of members that contain executable procedures used by MAINVIEW AutoOPERATOR. These procedures are execute command lists (EXECs) that automate site functions. There can be several versions:

- The distributed parameter library, called BBPROC
- A site-specific parameter library or libraries

These can be

- A library created by AutoCustomization, called UBBPROC
- A library created manually, with a unique name

The site-created EXECs can be either user-written or customized MAINVIEW AutoOPERATOR-supplied EXECs from BBPROC.

product address space. *See* PAS.

profile library. Data set consisting of members that contain profile information and cycle refresh definitions for a terminal session connected to a BBI-SS PAS. Other members are dynamically created by MAINVIEW applications. There can be several versions:

- The distributed profile library, called BBPROF
- A site-specific profile library or libraries

These can be

- A library created by AutoCustomization, called SBBPROF
- A library created manually, with a unique name

The site library is a common profile shared by all site users. The terminal session CLIST creates a user profile automatically if one does not exist; it is called userid.BBPROF, where userid is your logon ID. User profile libraries allow each user to specify unique PF keys, CYCLE commands, target system defaults, a Primary Option Menu, and a unique set of application profiles.

Q

query. One of two constituent parts of a view; the other is form. A query defines the data for a view; a form defines the display format. *See also* form, view.

R

realtime data. Performance data as it exists at the moment of inquiry. Realtime data is recorded during the smallest unit of time for data collection. *Contrast with* historical data. *See also* current data and interval data.

Resource Analyzer. Online realtime displays used to analyze IMS resources and determine which are affected by specific workload problems.

Resource Monitor. Online data collection services used to monitor IMS resources and issue warnings when defined utilization thresholds are exceeded.

row. (1) Horizontal component of a view or display comprising all the fields pertaining to a single device, address space, user, etc. (2) Horizontal component of a DB2 table consisting of a sequence of values, one for each column of the table.

RxD2. Product that provides access to DB2 from REXX. It provides tools to query the DB2 catalog, issue dynamic SQL, test DB2 applications, analyze EXPLAIN data, generate DDL or DB2 utility JCL, edit DB2 table spaces, perform security administration, and much more.

S

sample cycle. Time between data samples.

For the CMF MONITOR Extractor, this is the time specified in the extractor control statements (usually 1 to 5 seconds).

For realtime data, the cycle is not fixed. Data is sampled each time you press Enter.

sample library. Data set consisting of members each of which contains one of the following:

- Sample JCL that can be edited to perform specific functions
- A macro that is referenced in the assembly of user-written services
- A sample user exit routine

There can be several versions:

- The distributed sample library, called BBSAMP
- A site-specific sample library or libraries

These can be

- A library created by AutoCustomization, called UBBSAMP
- A library created manually, with a unique name

sampler. Program that monitors a specific aspect of system performance. Includes utilization thresholds used by the Exception Monitor. The CMF MONITOR Extractor contains samplers.

SBBPROF. *See* profile library.

scope. Subset of an SSI context. The scope could be all the data for the context or a subset of data within the context. It is user- or site-defined. *See* SSI context, target.

screen definition. Configuration of one or more views that have been stored with the SAVEScr command and assigned a unique name. A screen includes the layout of the windows and the view, context, system, and product active in each window.

selection view. In MAINVIEW products, view displaying a list of available views.

service class workload. Collection of address spaces defined to OS/390 or z/OS. If you are running Workload Manager (WLM) in goal mode, MAINVIEW for OS/390 creates a service class workload for each service class that you define through WLM definition dialogs.

If you are running MVS 4.3 or earlier, or MVS/SP 5.1 or later with WLM in compatibility mode, MVS creates a performance group workload instead of a service class. *See* performance group workload.

service objective. Workload performance goal, specified in terms of response time for TSO workloads or turnaround time for batch workloads. Performance group workloads can be measured by either objective. Composite workload service objectives consist of user-defined weighting factors assigned to each constituent workload. For compatibility mode, neither OS/390 nor z/OS provides any way to measure service.

service point. Specification, to MAINVIEW, of the services required to enable a specific product. Services can be actions, selectors, or views. Each target (for example, CICS, DB2, or IMS) has its own service point.

The PLEX view lists all the defined service points known to the CAS to which the terminal session is connected.

service request block (SRB). Control block that represents a routine to be dispatched. SRB mode routines generally perform work for the operating system at a high priority. An SRB is similar to a task control block (TCB) in that it identifies a unit of work to the system. *See also* task control block.

service select code. Code entered to invoke analyzers, monitors, and general services. This code is also the name of the individual service.

session. Total period of time an address space has been active. A session begins when monitoring can be performed. If the product address space (PAS) starts after the job, the session starts with the PAS.

SG-Auto. *See* MAINVIEW SRM SG-Auto.

SG-Control. *See* MAINVIEW SRM SG-Control.

single system image (SSI). Feature of the MAINVIEW window environment architecture where you can view and perform actions on multiple OS/390 systems as though they were a single system. The rows of a single tabular view can contain rows from different OS/390 or z/OS images.

Skeleton Tailoring Facility. A facility in MAINVIEW AutoOPERATOR that allows skeleton JCL to be used during job submission. Skeleton JCL can contain variables within the JCL statements to be substituted with data values at job submission time. Directive statements can be used in the skeleton JCL to cause the repetition of a set of skeleton statements. This facility functions similar to the TSO skeleton tailoring facility.

SRB. *See* service request block.

SSI. *See* single system image.

SSI context. Name created to represent one or more targets for a given product. *See* context, target.

started task workload. Address spaces running jobs that were initiated programmatically.

statistics interval. For MAINVIEW for DB2, cumulative count within a predefined interval (30-minute default set by the DB2STATS parameter in the distributed BBPARM member BBIISP00) for an analyzer service DELTA or RATE display. Specifying the DELTA parameter displays the current value as the difference between the value sampled by the current analyzer request and the value sampled at the start of the current interval. Specifying the RATE parameter displays the current value by minute (DELTA divided by the number of elapsed minutes).

stem variables. A REXX facility, supported in MAINVIEW AutoOPERATOR REXX EXECs and the Skeleton Tailoring Facility, where variable names end with a period followed by a

number, such as &POOL.1. This configuration allows each variable to actually represent a table or array of data, with the zero variable containing the number of entries in the array. For example, &POOL.0 = 5 would indicate variables &POOL.1 through &POOL.5 exist.

StopX37/II. *See* MAINVIEW SRM StopX37/II.

StorageGUARD. *See* MAINVIEW SRM StorageGUARD.

summary view. View created from a tabular view using the Summarize option in view customization. A summary view compresses several rows of data into a single row based on the summarize criteria.

SYSPROG services. Component of MAINVIEW for OS/390. Over 100 services that detect, diagnose, and correct OS/390 or z/OS system problems as they occur. Accessible from the OS/390 Performance and Control Main Menu. Note that this component is also available as a stand-alone product MAINVIEW SYSPROG Services.

system resource. *See* object.

T

target. Entity monitored by one or more MAINVIEW products, such as an OS/390 or z/OS image, an IMS or DB2 subsystem, a CICS region, or related workloads across systems. *See* context, scope, SSI context.

target context. Single target/product combination. *See* context.

TASCOSTR. MAINVIEW for IMS Offline program that summarizes detail and summary IMS Resource Utilization Files (IRUFs) to be used as input to the offline components.

task control block (TCB). Address space-specific control block that represents a unit of work that is dispatched in the address space in which it was created. *See also* service request block.

TCB. *See* task control block.

terminal session (TS). Single point of control for MAINVIEW products, allowing data manipulation and data display and providing other terminal user services for MAINVIEW products. The terminal session runs in a user address space (either a TSO address space or a standalone address space for EXCP/VTAM access).

TDIR. *See* trace log directory.

threshold. Specified value used to determine whether the data in a field meets specific criteria.

TLDS. *See* trace log data set.

total mode. Usage mode in CMFMON wherein certain columns of data reflect the cumulative value between collection intervals. Invoked by the DELTA OFF command. *See also* collection interval, delta mode.

trace. (1) Record of a series of events chronologically listed as they occur. (2) Online data collection and display services that track transaction activity through DB2, IMS, or CICS.

trace log data set (TLDS). Single or multiple external VSAM data sets containing summary or detail trace data for later viewing or printing. The trace log(s) can be defined as needed or dynamically allocated by the BBI-SS PAS. Each trace request is assigned its own trace log data set(s).

trace log directory (TDIR). VSAM linear data set containing one entry for each trace log data set. Each entry indicates the date and time of data set creation, the current status of the data set, the trace target, and other related information.

transaction. Specific set of input data that initiates a predefined process or job.

Transaction Accountant. MVIMS Offline component that produces cost accounting and user charge-back records and reports.

TS. *See* terminal session.

TSO workload. Workload that consists of address spaces running TSO sessions.

U

UAS. *See* user address space.

UBBPARM. *See* parameter library.

UBBPROC. *See* procedure library.

UBBSAMP. *See* sample library.

user address space. Runs a MAINVIEW terminal session (TS) in TSO, VTAM, or EXCP mode.

User BBPROF. *See* profile library.

V

view. Formatted data within a MAINVIEW window, acquired from a product as a result of a view command or action. A view consists of two parts: query and form. *See also* form, job activity view, query.

view definition. Meaning of data that appears online, including source of data, selection criteria for data field inclusion and placement, data format, summarization, context, product, view name, hyperlink fields, and threshold conditions.

view command. Name of a view that you type on the COMMAND line to display that view.

view command stack. Internal stack of up to 10 queries. For each command, the stack contains the filter parameters, sort order, context, product, and timeframe that accompany the view.

view help. Online help describing the purpose of a view. To display view help, place the cursor on the view name on the window information line and press PF1 (HELP).

W

window. Area of the MAINVIEW screen in which views and resources are presented. A window has visible boundaries and can be smaller than or equal in size to the MAINVIEW window area. *See* active window, alternate window, current window, MAINVIEW window area.

window information line. Top border of a window. Shows the window identifier, the name of the view displayed in the window, the system, the scope, the product reflected by the window, and the timeframe for which the data in the window is relevant. *See also* window status field.

window number. Sequential number assigned by MAINVIEW to each window when it is opened. The window number is the second character in the window status field. *See also* window status field.

window status. One-character letter in the window status field that indicates when a window is ready to receive commands, is busy processing commands, is not to be updated, or contains no data. It also indicates when an error has occurred in a window. The window status is the first character in the window status field. *See also* window information line, window status field.

window status field. Field on the window information line that shows the current status and assigned number of the window. *See also* window number, window status.

windows mode. Display of one or more MAINVIEW product views on a screen that can be divided into a maximum of 20 windows. A window information line defines the top border of each window. *Contrast with* full-screen mode.

WLM workload. In goal mode in MVS/SP 5.1 and later, a composite of service classes. MAINVIEW for OS/390 creates a workload for each WLM workload defined in the active service policy.

workflow. Measure of system activity that indicates how efficiently system resources are serving the jobs in a workload.

workload. (1) Systematic grouping of units of work (e.g., address spaces, CICS transactions, IMS transactions) according to classification criteria established by a system administrator. (2) In OS/390 or z/OS, a group of service classes within a service definition.

workload activity view. Tracks workload activity as the workload accesses system resources. A workload activity view measures workload activity in terms of resource consumption and how well the workload activity meets its service objectives.

Workload Analyzer. Online data collection and display services used to analyze IMS workloads and determine problem causes.

workload definition. Workload created through the WKLIST view. Contains a unique name, a description, an initial status, a current status, and selection criteria by which address spaces are selected for inclusion in the workload. *See* Workload Definition Facility.

Workload Definition Facility. In MAINVIEW for OS/390, WKLIST view and its associated dialogs through which workloads are defined and service objectives set.

workload delay view. Tracks workload performance as the workload accesses system resources. A workload delay view measures any delay a workload experiences as it contends for those resources.

Workload Monitor. Online data collection services used to monitor IMS workloads and issue warnings when defined thresholds are exceeded.

workload objectives. Performance goals for a workload, defined in WKLIST. Objectives can include measures of performance such as response times and batch turnaround times.

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